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BENCE-JONES PROTEINURIA

SOME OBSERVATIONS ON ITS OCCURRENCE, WITH PARTICULAR REFERENCE TO NEPHRITIS AND HYPERTENSION

SYDNEY R. MILLER, M.D.
AND
WALTER A. BAETJER, M.D.
BALTIMORE

In 1847, Bence-Jones, an English chemist, first described the occurrence of a protein-like substance of an unusual nature found in the urine of a person suffering from a serious disease of the bones. Little attention was paid to the matter until the substance was rediscovered and described in much greater detail by Kuehne in 1869. In 1873, von Rustizky first classified the primary bone lesions now known as multiple myeloma. Finally, in 1899, there appeared the joint report of Kahler, a clinician, and of Huppert, a chemist, in which, for the first time, the clinical relationship between Bence-Jones proteinuria and primary diseases of the bones was noted. Recognition of this relationship is found in the term "Kahler's disease," which is synonymous with the clinical syndrome of multiple myeloma and Bence-Jones proteinuria.

Since 1889, the general subject of Bence-Jones proteinuria, its nature, origin and significance, has been investigated by numerous workers. Formerly considered an albumose, or, possibly, closely related to the proteoses, the Bence-Jones body is now regarded by most observers as a true protein *sui generis*. This assumption is based on the facts that it possesses its own peculiar amino-acid partition, and characteristically yields a high proportion of aromatic radicals—facts established by Hopkins, Savory and others. Hopkins and Savory state that recent studies indicate that the Bence-Jones molecule is of very large size, and since it yields all of the ordinary amino-acids, it cannot in any sense be regarded as some unusual fractional unit, arising from the partial breakdown of proteins during metabolism. The distinguishing features between Bence-Jones protein and the urinary proteoses are very well summarized by Rosenbloom. More recently certain biologic reactions, supported by the complement fixation work of Massini, suggest a close relationship between Bence-Jones protein and serum proteins. Finally, it is to be noted that the excretion of this body does not depend on either the type or the amount of protein ingested.

As to the origin of the substance, its mode of formation, and how it enters the blood, there is still much doubt. Numerous theories have been advanced, none of which have been conclusively proved. All are of great interest. The most important ones may be thus summarized:

1. The substance arises by reason of the loss of some unknown important function of the bone marrow, a view advanced by Donneti.

2. Magnus-Levy, Senator and others assume that it results from some abnormality in protein metabolism.

3. Chittenden, Parkes-Weber, Leddingham and Hutchinson regard Bence-Jones protein either as arising from some enzyme action of the tumor cells, or that it is a special product elaborated by them; or, finally, that it may be a degeneration product of the tumor cells.

4. Ottenburg, Gies, and more recently Rosenbloom have shown that Bence-Jones protein possesses many properties in common with the elastoses, and hence assume that it may arise through the action of some bone marrow ferment on bone elastin or osseo-albuminoid.

5. Although their evidence is inconclusive, the theory propounded by Hopkins and Savory is perhaps the most satisfactory. On the basis of metabolic and dietetic studies, they assume that Bence-Jones proteinuria is the result wholly of endogenous metabolism, "an endogenous metabolic anomaly analogous to cystinuria and alkaptonuria, occurring on a higher level." Or, stated in another way: Bence-Jones proteinuria represents either the normal, abnormal or aberrant stage of bone synthesis, the completion of which is hindered by some unknown deficiency, in association with some unusual set of physicochemical adjustments, which permit the body to pass through an organ capable of holding back smaller protein molecules. It is certain that the large amounts excreted strongly suggest some general and not easily exhausted source of supply; and its unusual amino-acid content, of which tyrosin and phenylalanin constitute over 9 per cent., is a strong argument in favor of this attractive theory.

OCCURRENCE OF BENCE-JONES PROTEINURIA

The condition of multiple myeloma is relatively an uncommon one. About forty authentic cases were described up to 1904. Writing in 1916, Martin gave a total of 205. Ever since Kahler and Huppert's paper, the view has been accepted that Bence-Jones protein occurred only in cases of myeloma, and hence that body was regarded as a urinary anomaly of rather rare occurrence. Even in very recent times, such men as Parkes-Weber and Moffatt have seriously attempted to exclude from the multiple myeloma group those cases in which the characteristic bone tumors were unaccompanied by Bence-Jones proteinuria. Such a point of view is untenable; for although 80 per cent. at least of the multiple myeloma cases do occur in

association with Bence-Jones protein, definitely proved cases of myeloma have been observed without the unusual urinary body. It can be definitely stated, therefore, that Bence-Jones proteinuria is not pathognomonic of multiple myeloma.

Of far greater importance is the accepted fact that Bence-Jones proteinuria may occur, not infrequently, in conditions other than multiple myeloma. This point has been particularly emphasized recently in a series of articles by Boggs and Guthrie. Orum, in 1904, observed Bence-Jones protein in a case of bone carcinomatosis. Askanazy noted it in a case of lymphatic leukemia, a finding confirmed in 1909 by Decastello, who observed the protein in two out of nine cases of lymphatic leukemia, but in none of ten cases of myeloid leukemia. Writing in 1913, Boggs and Guthrie reported three cases, the first, so far as they were able to ascertain, in the literature, of Bence-Jones proteinuria in association with myeloid leukemia. Up to that date, the protein had never been observed in the acute forms of the disease, either lymphatic or myeloid, and, including the cases which they presented, only eight times in the chronic varieties. Within a period of fifteen months, they detected Bence-Jones proteinuria in five cases—four of leukemia and one of metastatic bone carcinoma. On the other hand, they compiled sixty-five other cases in which there were existing bone or bone marrow lesions, but in which they were unable to discover Bence-Jones protein. Their findings furnish additional confirmation of the view that Bence-Jones proteinuria is not essentially dependent on one disease, but is a manifestation of disturbances in the bone marrow affecting endogenous metabolism. On the basis of the available material, one is rather obliged to agree with Vance, who points out the significant fact that in no case of Bence-Jones proteinuria have the bones or bone marrow been definitely proved to be free from some pathologic process. In this light it is interesting to note that Taylor, Miller and Sweet have recently reported a case, with necropsy, in which definite myelomas of the sacral bones, ribs and vertebrae were found, although during life the roentgen ray had failed absolutely to detect their existence. In the same case Bence-Jones protein was found, postmortem, in the pleural fluid and in the heart's blood, findings which would indicate that the substance circulates readily, despite many attempts to isolate it from the blood during life.

Where and how the body is formed, why it appears in the urine in some cases and not in others of the same clinical type, are totally unsettled points. One might easily assume that for unknown reasons it is not formed in some cases, or that in others it is, but, for some equally unknown reason, fails to pass through the kidneys.

It is rather singular to note how few references there are in the literature to the coexistence of Bence-Jones proteinuria and nephritis. The first intensive study of the cases was made by Decastello. His analysis of reasonably authentic cases recorded up to that time revealed these points:

1. In sixteen cases of multiple myeloma with necropsy, 68 per cent. showed renal lesions that would have sufficed to produce ordinary albuminuria.

2. In thirteen cases of myeloma in which the urine was not examined for Bence-Jones protein, the kidneys were diseased in 77 per cent.

3. In twelve myeloma cases in which Bence-Jones protein was sought for, but not found, the kidneys were normal in 66.7 per cent.

4. In many cases of Bence-Jones proteinuria that have not come to necropsy, serum-albumin and all sorts of casts have been found in association with Bence-Jones protein.

Decastello cites a number of experiments, made both on animals and on human beings, in which the results all seem to point to the conclusion that Bence-Jones protein is not excreted by the normal kidney. Some evidence of renal involvement was afforded by the finding of a chlorid retention in four cases studied by Boggs and Guthrie. Folin and Denis report the finding of casts, in association with Bence-Jones proteinuria, in the absence of other signs of nephritis. Groat and Brewer, in 1916, reported briefly, so far as is known, the first instance of Bence-Jones proteinuria observed in a case of genuine nephritis; the patient had no bone marrow lesions other than a secondary anemia. No mention has been found of the occurrence of Bence-Jones proteinuria in association with marked hypertension in persons otherwise well.

CASES OBSERVED BY THE AUTHORS

Our object is briefly to record the fact that within the past eighteen months, we have observed seven cases of Bence-Jones proteinuria.[1] One of these occurred in the course of a well defined chronic myelogenous leukemia, and no further mention need here be made of this patient. One occurred with a true myeloma (Dr. Beck). In the five other cases, the important features noted were:

(*a*) The complete absence of any bone marrow, bone or blood disease, so far as modern methods could detect them.

(*b*) The occurrence of hypertension in all cases.

(*c*) The fact that the protein was discovered accidentally in three instances, in young persons, otherwise well, all of whom showed excellent renal function, despite the presence of numerous casts, but without the presence of serum-albumin in the urine.

(*d*) The finding of the protein in two cases which clinically would fall in the group of true chronic nephritis, with edema; the patients were between 40 and 45 years of age.

Three of these patients may be considered as so-called normals with Bence-Jones proteinuria.

History.—F. M., man, aged 27, had always been remarkably well, and by reason of incessant athletic indulgences, always phenomenally strong; he had had no serious diseases, and never used alcohol or tobacco, but was refused insurance, Feb. 26, 1916, because of "high blood pressure and a terrible amount of albumin in the urine." This unexpected finding brought him in for consultation. He had had no nephritic symptoms. Physical findings on examinations made by Drs. T. R. Boggs, W. A. Baetjer and S. R. Miller were all essentially normal. The blood pressure was 180 systolic and 100 diastolic.

Special Studies.—Roentgenograms of all bones of the body were normal on two occasions with a one year interval (Dr. C. R. Waters). Blood examinations were normal. The Wassermann test was negative. The urine was clear; had a specific gravity of 1.018; was acid, and the Bence-Jones body was present. Renal function tests revealed: Phenolsulphonephthalein, 97.5, 78 and 83 per cent.; renal test meal, normal result; Ambard's coefficient, 0.074; nonprotein nitrogen of

1. We are indebted to Drs. W. S. Thayer, Lewellys F. Barker, Henry B. Thomas and Harvey Beck for the opportunity of studying four of these cases.

the blood, 29 mg. per hundred c.c.; urea nitrogen of the blood, 18 mg. per hundred c.c.

The kidney function tests were carried out in the Johns Hopkins Hospital, under Dr. Herman Mosenthal. These have been repeated frequently and always with a normal result. At no time has the urine shown less than 4 gm. of protein per liter; yet, to date, the patient has remained absolutely well. The degree of hypertension has increased slightly.

The other two cases included in this group were discovered in the course of routine examinations, undertaken in one instance because of the complaint of headaches, in the other the complaint being "nervousness." In one, the blood pressure was 165; in the other, 180. All renal function studies were normal.

The remaining two patients had hypertensive nephritis with Bence-Jones proteinuria. Both were men, aged 40 and 45, clinically suffering from nephritis. One, a patient of Dr. L. F. Barker, was under close observation for some months; the other was seen casually, although long enough to permit complete studies. This patient has since died from nephritis.

History.—Dr. Barker's case: patient, Mr. W., aged 42, complained of nervousness, dyspnea, headaches, dizziness, and swelling of the feet. He was found to be 60 pounds overweight. There were evidences of hyperthyroidism. There was cardiac enlargement. The patient had numerous carious teeth. The blood pressure was 250.

Special Studies.—The blood picture was normal. The Wassermann test was negative. Roentgenoscopy revealed no bone tumors. The specific gravity of the urine was from 1.015 to 1.022; it was clear and acid; the Bence-Jones body was present; there were many casts of all varieties. The protein varied from 8 to 12 gm. per liter. Renal function tests revealed: Phenolsulphonephthalein, 33 per cent. in two hours. Renal test meal revealed slight fixation of the specific gravity, and a well marked retention of water, nitrogen and sodium chlorid; slight nocturnal polyuria. The nonprotein nitrogen was 33 mg. per hundred c.c.

Under treatment, the patient's general condition became much better, although the excretion of protein remained essentially constant, as did the hypertension. Soon after leaving the hospital, he developed a pronounced albuminuric retinitis.

TESTS EMPLOYED

The discovery of so many cases of Bence-Jones proteinuria aroused in our minds suspicions as to the exactness of the different tests employed for its detection, which were the following:

1. It was noted in all instances that the urine began to cloud almost as soon as the tube was placed in a Bunsen flame. This early precipitation by heat was always so marked that our suspicions were immediately aroused as to the nature of the coagulating substance. This phenomenon has been particularly emphasized in the articles of Boggs and Guthrie.

2. It was found in all instances that the protein body was wholly precipitated at temperatures ranging from 42 to 56 C. (107.6 to 132.8 F.). Moreover, there was invariably an optimal degree of acidity at which precipitation was most prompt and complete.

3. In no case was there complete solution of the precipitate at the boiling point, with reprecipitation on cooling, the one most characteristic feature of Bence-Jones protein. There always was partial solution in our cases. It has been shown that this most characteristic property of Bence-Jones protein may be absent at times, and is in some way closely related to the hydrogen ion content and salt concentration of the urine.

The urine when treated with two volumes of saturated ammonium sulphate has always yielded a voluminous precipitate, often coming down very slowly.

5. The urine, plus a few drops of 25 per cent. nitric acid, always yielded a precipitate, insoluble only in a large excess of the reagent. This precipitate always showed partial solution on boiling and reprecipitation on cooling.

6. The protein was precipitated by alcohol; if immediately separated by centrifuging, this precipitate was readily soluble in water. If allowed to remain in contact with the alcohol for a while, the precipitate became insoluble in water.

7. The protein did not pass through a dialyzing membrane—a point of difference from albumoses and proteoses.

Positive results with the foregoing tests seemed sufficient to establish the existence of Bence-Jones protein, or some other very similar to it. Other tests, to be found in textbooks, special articles, etc., were resorted to in special instances. Spontaneous precipitation was not noted in any instance.

SUMMARY AND CONCLUSIONS

The recognition, within fifteen months, of seven instances of Bence-Jones proteinuria is rather strong evidence against the accepted view of the rarity of its occurrence and its limitation to diseases of the bone or bone marrow. The protein in the urines examined answered so closely all of the accepted criteria for Bence-Jones protein that one is forced to assume that either the Bence-Jones body was present or some other protein not readily distinguishable from it.

Two points seem to stand out as of special interest:

1. Bence-Jones protein apparently may occur in seemingly healthy young persons, in whom it may be discovered accidentally. In the cases reported, there were, in addition, hypertension and cylindruria, despite functional renal tests which were in all respects normal. These cases may be strong additional proof of the theory that Bence-Jones proteinuria is an inborn error or anomaly of metabolism. The question of a possible relationship of the protein to the high blood pressure, and the query as to whether these cases may not become true hypertensive nephritics, remain to be settled after further observation. It is rather singular that such a degree of renal irritation as is evidenced by the extraordinary grade of cylindruria in these cases has, in all instances thus far studied, been accompanied by no more than the slightest grade of albuminuria.

2. So far as is known, the instances here recorded are the first in which Bence-Jones protein has been the only urinary protein occurring in cases of chronic nephritis with edema and high blood pressure. The occurrence of large amounts of albumin in these patients has long been recognized. One is forced to wonder whether Bence-Jones protein has not been missed in some of these cases, merely because of the widely accepted idea of its rarity. Stated in other words, it seems obvious that the association of Bence-Jones proteinuria, hypertension and nephritis is probably not uncommon, and the chances are that attention called to this matter will result in the finding of more cases.[2]

11 East Chase Street.

2. Tabulation of references is purposely omitted. A comprehensive bibliography has been compiled by Rosenbloom, Jacob: A Review of the History of Bence-Jones' Protein and Multiple Myeloma, with Complete Bibliography, Med. and Surg., 1917, **1**, 257.

THE MUSCULAR STRENGTH OF COLLEGE WOMEN

WITH SOME CONSIDERATION OF ITS DISTRIBUTION: PRELIMINARY PAPER

CLELIA DUEL MOSHER, A.M., M.D.
Assistant Professor of Personal Hygiene, Leland Stanford Junior University
AND
ERNEST GALE MARTIN, PH.D.
Professor of Physiology, Leland Stanford Junior University
STANFORD UNIVERSITY, CALIF.

The present world war has called women to tasks totally unsuited to the accepted standards of women's physical strength and capacities. At the present time, therefore, when our nation needs to mobilize every particle of woman power as well as man power, it is well to determine with as much definiteness as possible what that power may be. In the case of woman particularly, it is useful to know whether these unprecedented demands on her strength and activities are liable to make her racially less efficient, and whether many of the handicaps are real or only traditional.

In hope of gaining more exact information concerning the muscular strength of woman, this study was undertaken.

Dr. Martin's method of testing muscular strength,[1] originally devised for the study of cases of anterior poliomyelitis, was used. Forty-five average healthy college women, most of whom had always been physically active, although, in the majority of the instances, not specially athletic, were studied.[2]

In the progress of this work, certain improvements in the manner of applying the spring balance method to adults were devised.

The following groups of muscles both on the right and the left side of each woman were tested: pectorals, latissimus dorsi, anterior and posterior deltoids, forearm extensors and flexors, wrist extensors, thumb adductors, and either wrist flexors or finger flexors. The wrist flexion test was found by some of the women to cause lameness. The finger flexion was substituted in the later testing. These muscle groups were tested with the subject standing. The following tests were made in the horizontal position: dorsal flexion, inversion and eversion of foot, adduction and abduction of thigh, hip extension and flexion, knee extension and flexion.

Thus a full test included observations of thirty-six groups of muscles. Each test was repeated two or three times, thus insuring as accurate observation as possible by securing the maximum cooperation of the woman on whom the tests were made. The highest record correctly made was used in each case.

These forty-five women were tested 120 times; there were ninety-five full tests and twenty-five partial tests. Every woman was tested from two to five times, and 3,576 muscle groups in the forty-five women were tested. Dr. Mosher made schematograms[3] of all the women studied.

A convenient method of classifying the persons studied is in terms of "the strength factor," which is simply the figure obtained by dividing the total strength, as determined by the tests, by the weight. In Table 1 the strength factors for the entire group of cases are summarized.

In Table 2 the cases are grouped in accordance with their strength factors. A study of the table shows that the first group, which has the lowest average strength factor, 18.78, is made up of the tallest and heaviest women, with 50 per cent. of them overweight, the average overweight being 30.1 pounds. In this group, also, three of the eight women are immature physically though not sexually, and six, or 75 per cent., show a marked lack of coordination.

The third group has an average strength factor of 26.77, which approaches the strength factor of the group of athletic college men. This group of women is especially remarkable because it is made up almost uniformly of the most perfect feminine type. Two cases (28 and 42), which fall somewhat below this standard, will be discussed later. Members of the third group of women are, on the average, shorter and more compactly built, and lighter in weight than members of either of the other two groups.

We find here, with only two exceptions, the women with the highest degree of coordination. The most striking fact in connection with the women of this group is, perhaps, their history in regard to exercise. Without exception, they have always been physically active, playing with brothers and boy cousins without distinction of sex, sharing the same games and having the same activities.

TABLE 1.—AVERAGE, MAXIMUM AND MINIMUM STRENGTHS FACTORS OF FORTY-FIVE WOMEN ARRANGED IN AGE GROUPS

Ages	16-20	20-25	25-35	35-56	All Ages
No. of cases	10	26	5	4	45
Average strength factor	21.5	23.8	23	20.8	22.5
Maximum strength factor	26.6	30.4	25.3	25.3	30.4
Minimum strength factor	18.4	19.3	18.7	16.6	16.6

TABLE 2.—FORTY-FIVE WOMEN ARRANGED IN GROUPS ACCORDING TO STRENGTH FACTOR

	Strength Factor 20 and Below	Strength Factor Above 20 and Less than 25	Strength Factor 25 and Over
Number of cases	8	26	11
Strength Factor:			
Average	18.78	22.3	26.77
Maximum	20	24.6	30.4
Minimum	16.6	20.3	25
Total Strength:			
Average	2,789	2,960	3,513
Maximum	3,220	3,330	4,130
Minimum	2,320	2,565	3,060
Average age	27	23.5	23 9/12
Maximum age	56	53.3	42 4/12
Minimum age	18	18	16 2/12
Average height	65	64.5	63.7
Maximum height	68.9	67.7	66.4
Minimum height	62	60.2	59.6
Average weight	148.9	133.6	131.6
Maximum weight	170.8	154.5	165.5
Minimum weight	119.8	116.4	112.9
Overweight (5 pounds)	(4)	(12)	(5)
Average	30.1	15.78	15.5
Maximum	39.5	32.5	39.5
Minimum	11	5.3	5.4
Underweight (5 pounds)		(5)	(2)
Average	*	11.4	9.1
Maximum	*	17.8	13.0
Minimum	*	5.2	5.3

* None over 5 pounds.

Case 28, with a strength factor of 28.4, and Case 42, with a strength factor of 25.5, also rather immature, fall somewhat below the high average standard of type in this group, although they both, in regard to the secondary sexual characters, and functionally, are normal women. Both belong to the tall, lean type, though they lack the poise and balance found so uniformly in this group. They are precipitate in action and show a lesser degree of coordination than the other members of their group.

1. Martin, E. G., and Lovett, R. W.: A Method of Testing Muscular Strength in Infantile Paralysis, THE JOURNAL A. M. A., Oct. 30, 1915, p. 1512. Lovett, R. W.: The Treatment of Infantile Paralysis, p. 152.

2. Miss Etta L. Paris and Miss Inezetta Holt of the Department of Physical Training for Women, Stanford University, have given invaluable assistance in making these tests.

3. Mosher, C. D.: The Schematogram in School and Society, 1, May, 1915.

Case 36, the oldest woman in the group, aged 42 2/12, is married, has borne three children, and has a strength factor of 25.3. She said, "I have played running games and a little football, climbed trees, ridden horseback, played tennis in college, and had four years of gymnastics. When there was anything to do, such as moving a piano or a trunk, it never occurred to me to call a man. I did whatever there was to do. I have never worn a corset, and my clothes have been loose and supported. When fashion demanded three petticoats, I wore one." In this middle period of life, she has retained her youthfulness and sparkle to an unusual degree, and is intellectually brilliant.

Case 41, the youngest girl in this group, aged 16 2/12, has a strength factor of 26.6. She is a charming young girl, very feminine in type, an unusually good tennis player, is musical, and is intellectually of great promise. This case is of special interest since a record was made of her brother, who is only fourteen months older, and whose strength factor was found to be 26.4, a matter of 0.2 less than his sister's. The two were brought up with the same occupations and physical activities until the girl was 12 years old, when she was graduated from her overalls into skirts and into some of the conventional physical limitations of women.

The second group is composed of women in whom the same causes are operative as in the first and the third group. For lack of space, the discussion of this group will be postponed to a later paper.

Four married women ranging in age from 34 to 56 years gave an average strength factor of 20.8. The maximum strength factor in this group is 25.3, which is considerably above the average of the whole group of forty-five women, and is exceeded by only five others in the whole series of women studied. The four women of this group have borne thirteen children.

A general comparison of the series of forty-five college women with the series of athletic college men by Dr. Martin and Mr. Rich,[4] yields some suggestive results. Let us consider briefly the strength of the different muscle groups.

The pectoral muscles are commonly relatively stronger in man than in woman, the average percentage of total strength being 2.35 in man, and 2.1 in woman. Twelve women have equaled or exceeded the average of the men. Case 35 from the second group, a married woman who has borne two children, has in her pectorals 2.52 per cent. of her total strength. This difference between men and women, which is apparently not one of sex, may be explained as due to the difference in use. Constant ball playing, punching and thrusting make up a very large part of the boy's exercise. His clothing does not limit the use of the pectoral muscles, as do a woman's waist, brassière, etc. Moreover, although dress and convention have discouraged the use of the pectoral muscles in woman, their weakness is a distinct racial disadvantage. If the pectoral muscles were well developed in the woman, we should find fewer pendulous breasts in the young girl, as well as in the older woman.

The latissimus dorsi is better developed in woman than in man, contributing 1.65 per cent. of the total strength of woman and only 1.45 per cent. in man. The buttoning of women's waists and skirts in the back brings this group of muscles into constant use from childhood, while the boy's clothes are always more conveniently buttoned on the side or in front.

4. Rich: To be published.

The anterior and posterior deltoids in woman create from 2.45 to 1.80 per cent. of her total strength, while in man they create only from 2.1 to 1.35 per cent. of his total strength. This difference again is readily explained as due to difference in use, that is, to woman's constant practice of putting up her hair. It is common knowledge that the girl with heavy hair cries with fatigue day after day as she is taught this conventionally necessary use of her muscles. An athletic woman not considered in this series of observations tells me that the fatigue of putting up her heavy hair on top of her head is still so great that she has been forced to dress it low after repeated attempts. There is no occasion for a habitual use of the deltoids among men, and, furthermore, their heavy coats tend to limit the freedom of action of the deltoids.

Forearm extensions and flexions are better developed in man than in woman, making from 1.5 to 2.35 per cent. of man's total strength and only from 1.3 to 1.85 per cent. of woman's. Here again woman's close-fitting waists and sleeves and the conventional view of her physical delicacy, which would protect her from lifting all heavy weights, might at least partially explain this difference.

Wrist extension is found to be 1.30 as against 1.05 per cent, and wrist flexion 1.90 against 1.35 per cent. in favor of woman. This is readily explained by the constant small movements in sewing, knitting, etc., which form a large part of woman's occupation. Piano playing also is probably more frequent among women than among men.

TABLE 3.—PERCENTAGES IN HIP AND KNEE EXTENSIONS AND FLEXIONS

	Hip Extension Per Cent.	Hip Flexion Per Cent.	Knee Extension Per Cent.	Knee Flexion Per Cent.
Men	3.70	3.20	3.30	1.75
Women	3.42	2.69	3.175	1.30

The result of difference in use is especially well illustrated in a brief consideration of dorsal flexion. Children between 5 and 16 years of age show 3.20 per cent., women 3.07 per cent., and men 2.85 per cent. of their total strength. Strapping the foot to the stiff unyielding sole of modern shoes might account for the falling off in power of these muscles in the adult. That woman has considerably more power than man may be due to the fact that she is more commonly trained in dancing, as was the case in this series of college women as compared with college men.

Inversion shows little difference between men and women, the percentages being 1.90 for men and 1.95 for women. Eversion makes 1.80 per cent. of the total strength in man and 1.935 in woman. Again the fact that a large percentage of these women had some training in esthetic dancing may be a factor in the difference.

Adduction is responsible for 1.60 per cent. in man and 1.68 per cent. in woman. This may possibly be influenced by the conventional requirement of ladylike behavior, which demands that a woman's knees be kept together.

Abduction causes little difference, being 1.50 per cent. of man's total strength and 1.475 per cent. of woman's.

The most striking difference is found in the hip and knee extensions and flexions, shown in Table 3.

The limitation of movement due to the skirt and the consequent limitation of activities will probably

fully account for this difference. A superficial comparative study of Case 41, who grew up in overalls until she was 12 years old, having the same activities as her brother, may be profitable in discussing this point. Results of the comparison may be observed in Table 4.

Case 41, although a most perfect feminine type, shows only slight variation from her brother in hip extensions and flexions, considered either in pounds or in percentage distribution. She has worn skirts only four years.

The effect of the limitation of skirts is well illustrated in Case 37, whose extensions and flexions are considered in Table 5. Here we have a woman more

TABLE 4.—COMPARISON OF CASE 47 AND HER BROTHER

	Hip Extension		Hip Flexion		Knee Extension		Knee Flexion	
	Lb.	%	Lb.	%	Lb.	%	Lb.	%
Case 41	155	4.41	95	2.85	113	3.21	50.5	1.43
Brother 14 months older.	139	4.41	102	2.80	113	3.14	62	1.72

than 50 years old who has used a bicycle over a long period of years, often riding as many as 3,000 miles in a single year. We find her hip and knee extensors with a percentage distribution of her total strength exceeding the men athletes, while because of the limitation of skirts extending over a great many years, hip and knee flexors show a percentage distribution falling considerably below the percentage distribution in the group of college women who belong to a later period, when the limitation of skirts is less continuously operative. This case emphasizes the effect of use or disuse as a determining factor.

From this hasty survey of the data concerning the muscular strength of college women, certain tentative conclusions are suggested:

There is no difference in the muscular strength of women and men which is due to sex as such. Such differences as are frequently found are due to differences in the use of the muscles, brought about by the conventional limitations of activity or by dress. Marked overweight or marked underweight tends to lower the strength factor, as does also lack of coordination, which is too frequently found in women and exaggerated by their scant physical activity in childhood. The effects of muscular training persist long

TABLE 5.—PERCENTAGES IN A COMPARATIVE STUDY OF HIP AND KNEE FLEXIONS AND EXTENSIONS

	Hip Extension Per Cent.	Hip Flexion Per Cent.	Knee Extension Per Cent.	Knee Flexion Per Cent.
Case 37 (age 53 5/12 years)	3.93	2.425	3.61	1.195
Average percentage athletic men	3.70	3.20	3.30	1.75
Average percentage women	3.42	2.69	3.175	1.30

after the particular exercise has ceased. A high degree of muscular power in a woman in no way lessens her racial efficiency. Lack of muscular power, as in the pectoral muscles, may be a distinct racial disability.

It has been shown that periodic disability in a woman when no organic disease exists is readily eliminated.[5] We may therefore conclude that sex is not necessarily a disability, and that if some method be found of adjusting work to the individual strength under proper hygienic conditions, without reference to sex, there is no reason why the potential power of woman may not be used without danger of lessening her racial efficiency.

5. Mosher, C. D.: A Physiologic Treatment of Congestive Dysmenorrhea and Kindred Disorders Associated with Menstrual Function, THE JOURNAL A. M. A., April 25, 1914, pp. 1297-1301; Health and the Woman Movement, National Board Y. W. C. A., 1915.

EXPERIMENTAL STUDIES OF THE MODE OF ABSORPTION OF MERCURY WHEN APPLIED BY INUNCTION *

JAY FRANK SCHAMBERG, M.D.
JOHN A. KOLMER, M.D.
GEORGE W. RAIZISS, PH.D.
Professor of Dermatology, Professor of Pathology, and Assistant Professor of Physiological Chemistry, Respectively, Philadelphia Polyclinic and College for Graduates in Medicine
AND
JOSEPH L. GAVRON, B.S.
PHILADELPHIA

For a number of years there has been much discussion as to the manner in which mercury reaches the blood stream when rubbed into the skin in the form of inunction. Welander of Stockholm, after painstaking studies on extensive clinical material, came to the conclusion that the greatest part of the mercury applied by inunction is volatilized and absorbed through the lungs, and only a small portion through the skin. Many European clinicians were converted to this view through Welander's investigations. Welander, as a result of his work, advocated the light smearing of the skin with mercurial ointment rather than the attempt vigorously to rub the ointment in. He later advised inhalation cures, employing flat bags containing mercurial powder and worn around the neck at night.

Wile and Elliott[1] carried out studies in the mode of absorption of mercury in the inunction treatment, and by employing nonvolatile salts of mercury, came to the conclusion that mercury was absorbed through the skin as well as by volatilization and inhalation.

ANIMAL EXPERIMENTS

It occurred to us that an experimental method was available which would definitely prove the dominant route of absorption when mercury was applied to the skin.

We had constructed a box to house two rabbits, one of which was to be rubbed with mercury and the other to breathe the mercury-laden atmosphere. Rabbit A, which received the inunctions, had his head projecting into the outer air through an aperture in a heavy piece of canvas attached to one end of the box. A padded collar served the double purpose of making the animal comfortable and of preventing the rabbit from breathing the box air. Rabbit B received no inunctions, but was constantly breathing the atmosphere of the box heavily charged with mercury. The hair over considerable area on the back was removed from Rabbit A by means of a barium sulphid depilatory in order to avoid as much as possible traumatism that might result from shaving. Rabbit B was similarly treated in order to have the rabbits under strictly parallel conditions.

The experiment was repeated five times, ten rabbits being used for the entire investigation. In speaking of Rabbit A, we refer to the rabbit that received the rubbings in each experiment. The ointment rubbed in consisted in nearly all of the experiments of a 50 per cent. official mercurial ointment and also a 50 per cent. calomel ointment. The amount employed at each

* From the Dermatological Research Laboratories, Philadelphia Polyclinic and College for Graduates in Medicine.

1. Wile, U. J., and Elliott, J. A.: Mode of Absorption of Mercury in the Inunction Treatment of Syphilis, THE JOURNAL A. M. A., April 7, 1917, p. 1024.

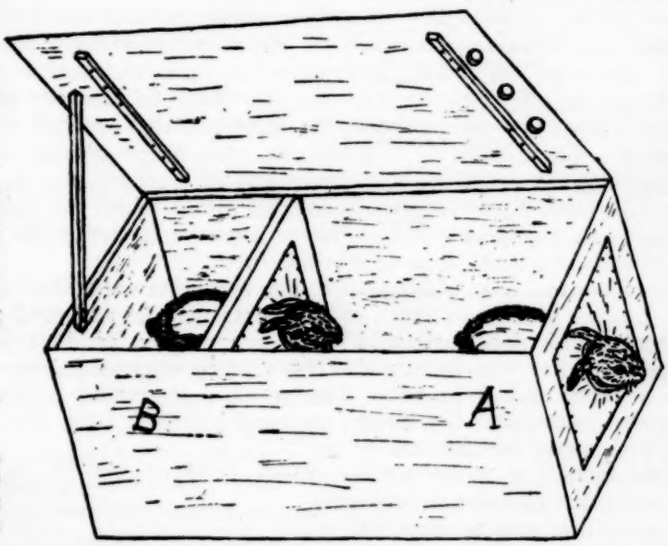
rubbing was very large in order to abbreviate the period of the experiment and to accentuate the findings. From 0.5 to 1 gm. of mercury per kilogram was applied to the skin; this is in the neighborhood of fifteen times the amount ordinarily used in man. The ointment was rubbed into the back for five minutes. Considerable unabsorbed ointment remained on the surface of the skin.

FINDINGS

If mercury applied to the skin is chiefly absorbed by volatilization and inhalation through the lungs, then Rabbit B, which was constantly inhaling air strongly charged with mercury volatilized from the back of Rabbit A should exhibit more marked mercurial effect. If, on the other hand, mercury is absorbed through the skin to a greater extent than it is inhaled through the lungs then Rabbit A should show the dominant mercurial effect.

In each of the five experiments, Rabbibt A succumbed after a brief period to mercurial poisoning, whereas Rabbit B lived throughout each experiment except the last, in which for some unaccountable reason it died. A careful necropsy and histologic and chemical examination of the organs failed to reveal the cause of death.

The diagnosis of mercurial poisoning in the Rabbit A series was based on chemical examination of the organs and histologic studies of a number of organs, particularly the kidneys.



Box constructed so as to house two rabbits in two separate compartments: *A*, rabbit which received mercurial inunctions and breathed the outer air; *B*, rabbit which constantly inhaled the mercury-laden atmosphere.

DETAILED RESULTS OF ANIMAL EXPERIMENTS

EXPERIMENT 1.—Rabbit 1, weighing 1,840 gm., was anointed for five minutes at a time with 20 grains of a 50 per cent. unguentum hydrargyri. The rabbit received three rubbings within nine days, and died four days later. Histologic examination of the organs revealed acute hyperemia of the glomeruli and intertubular tissues of the kidneys, also slight cloudy swelling, but no calcification; the lungs exhibited no pathologic changes, and the liver was likewise normal. No chemical examination of the organs of this rabbit was made.

EXPERIMENT 2.—Rabbit 2, weighing 1,484 gm., used as a control, was not rubbed, but inhaled the mercury-laden atmosphere, and was purposely killed on the thirteenth day, the day of death of Rabbit 1, in order that the organs might be studied histologically. No alteration of the kidneys or other organs was evident. This animal at death weight 1,707 gm., a gain of 223 gm. The kidneys on histologic examination exhibited no changes.

EXPERIMENT 3.—Rabbit 3, weighing 2,140 gm., was rubbed for five minutes at a time with 20 grains of a 50 per cent. calomel ointment. The animal received two rubbings within five days, and died five days after the second inunction. At death the animal weighed 1,565 gm., a loss of 575 gm. On microscopic examination the kidneys revealed acute hyperemia, but no other changes. The lungs, heart, spleen and suprarenal glands were normal. Chemical examination of the lungs, liver and kidneys gave positive tests for mercury, although the method pursued was not identical with those subsequently carried out, and the record is therefore not included in Table 2, exhibiting the chemical findings.

EXPERIMENT 4.—Rabbit 4, weighing 2,150 gm., was the control animal that breathed the mercury-laden air, but received no inunctions. This animal appeared in good condition, and was killed for histologic and chemical study of the organs. The kidneys, lungs, heart, spleen and suprarenal glands were found to be normal when microscopically examined. On chemical examination traces of mercury were found in the kidney and a large quantity in the liver. No examination of the lung tissue appears to have been made.

EXPERIMENT 5.—Rabbit 5, weighing 2,420 gm., received five minute inunctions of 17 grains (1 gm. +) of a 50 per cent. unguentum hydrargyri. Three rubbings were given within six days, and three days later the animal died. Microscopic examination of the kidneys revealed cloudy swelling of the epithelium of the tubules, with edematous distention of the malpighian tufts, marked edematous distention of the tubules, but no calcification. The diagnosis of the condition was acute tubular nephritis. The lungs were normal. On chemical examination there were found large amounts of mercury in the kidneys, liver and skin; the lung was free of mercury, but a faint trace was present in the brain. This animal was pregnant, and the placenta and fetus were found negative to tests for mercury.

EXPERIMENT 6.—Rabbit 6, which weighed 2,340 gm., was the control animal that inhaled the mercury-laden atmosphere. It was in good condition and was killed for microscopic and chemical study of the organs. The kidneys, skin and lungs presented no histologic changes. Chemical examination revealed that the kidneys and the exposed skin contained considerable quantities of mercury (in the skin, this must have been due to deposition of volatilized mercury). The lungs contained a moderate amount of mercury, and the brain a faint trace; the liver was mercury free.

EXPERIMENT 7.—Rabbit 7, weighing 1,640 gm., received two five minute rubbings of 10 grains of calomel in 1 dram of base, within five days. The animal died three days after the second rubbing. Histologic examination of the kidney disclosed acute hyperemia of the glomeruli and slight cloudy swelling with acute congestion. On chemical examination the kidneys, liver and skin were found to contain relatively large amounts of mercury, and there was a small quantity in the lung.

EXPERIMENT 8.—Rabbit 8, weighing 2,630 gm., the control animal that inhaled mercury-laden air, was in good condition, and was killed for microscopic and chemical study of the organs. On microscopic examination the lungs and kidneys were found normal, and chemical examination failed to reveal the presence of mercury in the lungs or other organs.

EXPERIMENT 9.—Rabbit 9, weighing 1,400 gm., received four rubbings within twelve days of an ointment of calomel containing 10 grains to the rubbing. The rabbit died six days after the fourth rubbing. At death the animal weighed 830 gm., a loss of 570 gm. Histologic examination disclosed edema of the tufts of the kidneys, with slight exudative glomerulitis and cloudy swelling of the tubules. There were no changes in the lungs. Chemical examination revealed relatively large quantities of mercury in the kidneys, liver and skin, but it was absent in the lungs.

EXPERIMENT 10.—Rabbit 10, weighing 1,380 gm., a control animal, breathed the mercury atmosphere, but was not

anointed. The rabbit died four days after the onset of the experiment, without apparent cause. Necropsy disclosed no histologic changes in the kidneys or other organs. The lungs and kidneys were the only organs which were examined chemically, and mercury was not found in either of them.

DETECTION OF MERCURY IN ORGANS

In each test, one fifth of the total weight of the organ was employed. The organ was first weighed and then divided into very small pieces. These were warmed with 25 c.c. of concentrated hydrochloric acid on a steam bath, and the organic matter was destroyed by the addition, from time to time, of a little potassium chlorate. When this was completed the clear solution was cooled, diluted with water and filtered.

The filtrate was heated just to boiling to drive off any remaining chlorin, and, after the addition of copper filings, was allowed to stand over night. By this time the mercury was deposited on the copper. When much mercury was present, it was plainly visible in gray metallic condition. Traces of mercury were invisible, but could be later detected. The copper filings, after the supernatant liquid was poured off, were washed first with water, then with methyl alcohol and finally with ether, and allowed to dry. They were then introduced into a large test tube, and inside the latter was inserted a smaller test tube filled with cold water. The outer test tube was warmed by a flame. The mercury deposited on the copper filing thus volatilized, and was condensed on the bottom of the inner test tube. When this was completed the copper filings were removed and a small particle of iodin introduced in their place. This was warmed gently, and the iodin vapor which thus formed reacted with the mercury deposited on the inner tube and former a brick red deposit of mercuric iodid. By this method we could detect as small quantities as 0.05 mg. of mercury.

DETERMINATION OF MERCURY IN THE ORGANS

As is seen in Table 2, from two to three tests were made with tissue from each organ examined. These multiple examinations were carried out in the interest of accuracy to avoid errors as far as possible. The quantitative discrepancies, where they exist, may be in large part explained by the fact that different parts of the same organs might readily contain varying amounts of mercury.

TABLE 1.—OUTLINE OF EXPERIMENTS WITH MERCURIAL INUNCTIONS

Rabbit No.	Number of Inunctions	Period of Inunctions, Days	Duration of Life	Original Weight, Gm.	Weight on Death, Gm.	Substance Rubbed in	Amount Rubbed in at Each Inunction
1	3	9	Died in 13 days	1,840	.....	Unguentum hydrargyri 50%	20 grains (1.3 gm.)
2	None	...	Killed	1,484	1,707	Control	
3	2	5	10 days	2,140	1,565	Calomel ointment 50%	20 grains (1.3 gm.)
4	None	...	Killed	2,150	1,968	Control	
5	3	6	9 days	2,420	.....	Unguentum hydrargyri 50%	17 grains of mercury
6	None	...	Killed	2,340	.....	Control	
7	2	5	8 days	1,640	.....	Calomel ointment	10 grains (0.6 gm.)
8	None	...	Killed	2,630	.....	Control	
9	4	12	18 days	1,400	830	Calomel ointment	10 grains of calomel (0.6 gm.)
10	None	...	Died accidentally in 4 days	1,380	.....	Control	

COMMENTS

The chemical examination of the organs discloses the fact that animals rubbed with large amounts of mercurial ointments and dying shortly thereafter exhibited considerable quantities of mercury in the kidneys and the liver. These findings, taken in conjunction with the microscopic study of the organs, warrant the conclusion that the rabbits died of mercurial poisoning. The control animals, which were so placed in the experimental box that they were constantly inspiring an atmosphere heavily laden with mercury, did not exhibit effects of mercurial poisoning.

Rabbit 6 did show the presence of mercury in the kidneys and in the lungs. It is evident that this animal received into his system considerable quantities of the volatilized drug by inhalation. The other control animals experimented on in the same box did not, however, exhibit mercury in the lungs or other organs. The variation is, in our opinion, to be accounted for by the fact that metallic mercury (in mercurial ointment) is distinctly more volatile than calomel, which was the form of mercury used in Animals 8 and 10. In Rabbit 6 that inhaled a metallic mercury atmosphere, the lungs showed the presence of distinct amounts of mercury, but in Rabbits 8 and 10, which inhaled air in which the calomel was used, the lungs were negative as far as the presence of mercury was concerned.

The inunction experiments demonstrate that calomel ointments may be absorbed through the skin in sufficient amounts to produce fatal mercurial poisoning. This finding suggests the use of calomel for inunction purposes. Mercurial ointment made with metallic mercury has been used for over four centuries. Its therapeutic efficacy is well attested, but its general employment has been restricted because it is extremely dirty, soils the bed and body linen, and thereby discloses the nature of the treatment. Calomel is far more cleanly, and, moreover, is more easily absorbed through the skin. The following formula has given us the best results:

	gm.	
℞ Hydrargyri chloridi mitis.....	3	gr. xlv
Lanolini	1	gr. xv
Adipis benzoinati	2	gr. xxx

For each inunction.

It is probable that a somewhat larger dose of calomel than metallic mercury is necessary, because of the lesser mercurial content (calomel contains 85 per

TABLE 2.—DETERMINATION OF MERCURY IN ORGANS OF RABBITS *

Organ	Rabbit 5			Control Rabbit 6			Rabbit 7			Control Rabbit 8			Rabbit 9			Control Rabbit 10		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Kidney	+4	+2		+2	+2		+2	+2		—	—		+3	+3		—	—	
Liver	+2	+2		—	—		+2	+2		—	—		+2	+3	+2			
Lung	—	—	—	+1	+1	+4	—	+1	—	—	—	—	—	—	—	—	—	—
Skin	+3	+3		+3	+2		+3	+3		—	—		+3	+3				
Brain	—	F. T.		F. T.	+1		—	—		—	—							
Fetus	—																	
Placenta	—																	

* In this table, F. T. denotes faint trace; +1, barely visible deposit of mercuric iodid; +2, good test; thin deposit of mercuric iodid plainly visible; +3, heavy deposit of mercuric iodid; +4, very heavy deposit of mercuric iodid; +5, extremely heavy deposit of mercuric iodid.

cent. of mercury), and because there is but little absorption through the lungs.

We believe that the safest method of introducing large amounts of mercury into the system is by inunction.

CONCLUSIONS

1. Animal experiments demonstrate that the chief avenue of absorption of mercury, when applied by inunction, is the skin.
2. Rabbits may be fatally poisoned with mercury by inunction, even when no opportunity of absorption through the lungs exists.
3. Rabbits breathing a mercury-laden atmosphere may absorb considerable quantities of mercury through the lungs, but, as a result of our experiments, we believe the respiratory absorption to be far less important than the cutaneous absorption.
4. Metallic mercury in the form of the official mercurial ointment is more volatile and is much more apt to be absorbed by the lungs, than calomel ointments of equal strength.
5. Calomel ointments are fully as well absorbed through the skin as the ordinary blue ointment; indeed, we have the impression that calomel is absorbed with greater facility.
6. There appears to be no reason why calomel inunctions should not supplant the unclean blue ointment rubbings which have been so long in use.

WOOD ALCOHOL POISONING*

A. O. GETTLER, PH.D.
AND
A. V. ST. GEORGE, M.D.
Pathologic Chemist and Pathologist, Respectively, Bellevue and Allied Hospitals
NEW YORK

The prohibition by our government of the manufacture of distilled liquors will unquestionably lead to much "moonshining," adulteration and dilutions of liquors offered to the public. That such is the case, even at this early period of the war, is quite evident from the recent poisoning in this city of over thirty persons, six of whom died, with a whisky sold in one of the poorer sections of the city that on analysis proved to contain a considerable amount of wood (methyl) alcohol. Believing that similar cases will occur and with increasing frequency, despite the vigilance of our revenue and state officers, we feel it timely again to warn physicians, coroners and health officers, in order that they may be on their guard in similar cases, as prompt and efficient therapeutic measures must be instituted to hold any hope for recovery of the patient, and, furthermore, to detect any violations of the food laws.

It is our belief that the introduction into beverages of the dangerous poison, wood alcohol, is nearly always due to ignorance on the part of the blender. Many physicians and nearly all of the lay public are unacquainted with the chemical and physiologic differences between the relatively innocuous ethyl or grain alcohol and the dangerous methyl or wood alcohol when applied to the body or introduced into it. The refined wood alcohol tastes like ethyl alcohol, and, moreover, is considerably cheaper; hence the adulterator buys the latter, ignorant that severe poisoning, blindness and often death lurk within it.

The pharmacology of this poison has been presented by Pohl[1] and Hunt,[2] and we would refer the reader to their original papers. The violation of the food law and the criminal aspects of our cases are being investigated by the proper authorities, and we shall merely record the findings in the six fatal cases, with points in diagnosis and treatment and methods for detecting the poison.

Similar but meager histories were obtained, and we were unable to determine the quantities of the poison taken. Four of the patients were admitted to St. Vincent's Hospital, one to Bellevue Hospital, and one patient died in his own home. All had taken whisky a short time previously, and all had complained of violent abdominal pains, incessant vomiting and extreme weakness. Three of the patients complained of blindness. Three of the St. Vincent's patients and the Bellevue patient came into the hospitals in coma; one (Case 1), who was admitted while conscious, said that he had taken whisky a short time before; soon thereafter he noted intense abdominal pain, vomiting, increasing weakness and dimness of vision; finally he collapsed in the street, and was brought to the hospital, where he died half an hour after admission. The patient had the appearance of being in a severe toxic condition or collapse. The important points in all the physical examinations were slow respirations, dilated pupils, weak and rapid heart action, cold and clammy extremities, and deep coma.

In Case 1, stomach washings were obtained, and also some of the liquor that he had drunk. Both were found to contain wood alcohol.

The examination of the urine during life in Case 2 revealed albumin and casts, and gave a Fehling reduction (aldehyd formation?).

The diagnostic features of the acute type of poisoning are extreme physical weakness, acute gastrointestinal symptoms, blindness, and deep and prolonged coma, ending in death with cardiac collapse. In the chronic type of cases, blindness is the chief symptom.

A differential diagnosis from epilepsy, and especially all types of coma—uremia, cardiac, diabetic, cerebral, toxic and traumatic—must be made. This frequently is very difficult; but if we bear in mind the important symptoms mentioned above, and obtain a history of whisky drinking, together with an alcoholic breath, we should be suspicious, at least to the extent that we are dealing with some form of alcohol poisoning.

The treatment, to be at all efficacious, must be promptly instituted, and consists essentially of ridding the body of the poison, and supportive measures. The poison is but slowly and incompletely oxidized in the body to more dangerous poisons, namely, formaldehyd and formic acid, and as such very slowly (for four to five days, and even longer) eliminated by the kidneys. Mayer[3] has demonstrated that the relative toxicity of formic acid is six times greater than that of wood alcohol. For a considerable period of time, the alcohol is excreted unchanged into the stomach and intestine (Bongers[4]), and it is therefore important that early and frequent gastric and rectal lavage be carried out. The stomach washings should be imme-

* From the Department of Pathology, Bellevue and Allied Hospitals, Dr. Charles Norris, Director.

1. Pohl: Arch. f. exper. Path. u. Pharmakol., **21**, 281.
2. Hunt: Bull. Johns Hopkins Hosp., 1902, **13**.
3. Mayer: Arch. f. exper. Path. u. Pharmakol., **21**, 122.
4. Bongers: Arch. f. exper. Path. u. Pharmakol., **35**, 29.

diately examined for wood alcohol. Intravenous saline or sodium bicarbonate infusions and phlebotomy and transfusions, if the latter can be had quickly, should be administered. In addition, warmth and strong stimulation with strychnin, digitalis, caffein, camphor, epinephrin and oxygen must be given. It is said that ethyl alcohol is indicated to replace the methyl, and that it acts as a powerful stimulant; but we doubt this. For the treatment of the chronic form of poisoning, we refer the reader to the article by Buller and Wood,[5] who collected the histories of 275 American cases up to 1904, and to Birch-Hirshfeld,[6] who discusses the eye condition in considerable detail.

The postmortems in Cases 1 to 4 were performed by Dr. Otto H. Schultze, and in Cases 5 and 6 by Dr. A. V. St. George, in the presence of Dr. Benjamin Schwartz, coroner's physician. The gross anatomic diagnoses in all the cases were: marked cerebral congestion with increased cerebrospinal fluid; marked congestion of all the viscera, and acute pulmonary edema and congestion. In addition, in all cases except Case 2, only dark fluid blood was distributed throughout the heart and vessels. In Case 2 there was an aortic stenosis, and a soft red clot was present in the left heart. The brain in Cases 1 and 5 had a suspicious odor, not, however, distinctive of alcohol; no odor could be detected in the stomach or its contents. In Case 6 there was, in addition, a chronic pulmonary tuberculosis. In Case 5 there was marked parenchymatous degeneration of the kidneys and liver. Microscopic section of heart, kidney and liver did not show an increased amount of fat. Pohl reported that he found an increase in the amount of fat in the liver. Sections of the optic, vagus and phrenic nerves show marked degeneration of these structures.

RESULTS OF TESTS

	Reduced Fuchsin Test		Casein Test		Resorcin Test	
	Before Oxidation	After Oxidation	Before Oxidation	After Oxidation	Before Oxidation	After Oxidation
Case 1, brain....	—	+	—	+	—	+
Case 1, lavage ..	—	+	—	+	—	+
Case 1, beverage.	—	+	—	+	—	+
Case 2, brain....	—	+	—	+	—	+
Case 3, brain....	—	+	—	+	—	+
Case 4, brain....	—	+	—	+	—	+
Case 5, brain....	—	+	—	+	—	+
Case 5, urine 220 c.c.....	—	+	—	+	—	+
Case 5, blood 490 c.c.....	—	+	—	+	—	+

Parts of the brain in all of the six cases were examined chemically according to the method given below. We selected the brain tissue for the performance of our tests, because of the assumption that the poison has a selective action on nerve tissue, as is indirectly proved by the blindness and deep coma.

CHEMICAL ANALYSIS OF BRAIN

The sample was finely ground, and water was added to make a thin suspension; it was placed in a distillation flask; 3 drops of liquid petrolatum were added to prevent frothing; it was acidified with tartaric acid and distilled with steam. Thirty c.c. of the distillate were collected. Of this, 5 c.c. were placed in a test tube and oxidized by the plunging of a red hot copper spiral into it six or eight times. This oxidation is for the purpose of converting the methyl alcohol to formaldehyd.

The oxidized material as well as a little of the original distillate was tested by the following three methods:

Reduced Fuchsin Test.—To 2 c.c. of each of the distillates (both oxidized and nonoxidized), 3 drops of (colorless) reduced fuchsin were added. A red color develops if an aldehyd is present. This test is not specific for formaldehyd, but is given by the aldehyd group in general.

Casein Test.—To 2 c.c. of each of the distillates (both oxidized and nonoxidized), an equal amount of milk, then an equal volume of hydrochloric acid, and 2 drops of ferric chlorid are added. This is brought to a boil. If formaldehyd is present, a violet to red color develops. This test is specific for formaldehyd and is very delicate, detecting formaldehyd in dilutions of 1:250,000.

Resorcin Test.—To 2 c.c. of each of the distillates (both oxidized and nonoxidized), a few drops of 0.5 per cent. resorcin are added, and stratified on sulphuric acid. In the presence of formaldehyd a red ring develops. This test is specific for formaldehyd.

The brain in every one of the six cases was found to have methyl alcohol present. The tests before oxidation were negative, showing that no oxidation to aldehyd occurred in the brain.

In Case 5, blood and urine also were available. These were examined according to the method given; both the blood (490 c.c. of blood being used) and the urine (220 c.c.) showed methyl alcohol but no formaldehyd.

It is important to note that the refined wood alcohol, in addition to being used as a diluent of whisky, is frequently used in the preparation of essence of peppermint, Jamaica ginger, lemon extract, punch, cologne, liniments, Florida water, bay rum, witch hazel and in the arts in lacquers, varnishes, etc.

CONCLUSIONS

Physicians and health officers should warn the public of the dangers existing in the preparations of the kind enumerated above when applied to or introduced directly or by inhalation into the body. European authorities have shown that the denatured ethyl alcohol serves every purpose in medicine and in the arts as well as wood alcohol or better. We suggest, therefore, that legislation be enacted bringing about the prohibition of the sale of wood alcohol for domestic purposes, similar to laws now obtaining in England and Germany.

5. Buller, Frank, and Wood, C. A.: Poisoning by Wood Alcohol, THE JOURNAL A. M. A., Oct. 1, 1904, p. 972; Oct. 8, 1904, p. 1058; Oct. 15, 1904, p. 1117; Oct. 22, 1904, p. 1213; Oct. 29, 1904, p. 1289.

6. Birch-Hirshfeld: Arch. f. Ophth. (von Graefe's), **54**, 68.

Utilizing Shaker Colony Plants for War Purposes.—The Shaker colonies in the United States, which spread from the first one at Watervliet, N. Y., back in Revolutionary War times, over New England, New York, Kentucky and other states, have now, on account of the great decrease in the members of the sect, been suggested as sites for convalescent camps and other war purposes. Most of the Shaker villages, which where cooperative industrial and manufacturing communities, comprise from several hundred to several thousand acres, with large, substantial houses and farm buildings, which have been kept in good repair. A few of them have been abandoned or disposed of by purchase to state authorities or corporations for various public or corporate purposes. In many of them the membership has dwindled to such small proportions that they have been offered for sale at very reasonable figures. According to the statement of a social worker from New York, as set forth in the *Survey*, one community in that state with nearly 2,000 acres of fine land and about sixty buildings comprises five families of about thirty persons, with some children as wards. The community is at a loss to farm their land on account of the scarcity of agricultural labor. Various uses have been suggested for these farm colonies, as homes for feebleminded and delinquent, etc., in addition to that regarding their use as convalescent retreats for soldiers invalided home from the war. They are certainly adapted to some public utilitarian or welfare purpose, and use should be made of them in some such way.

PERMEABILITY OF THE MENINGES TO ARSENIC IN PARESIS AND TABES

SUPPLEMENTARY REPORT

J. HENRY BARBAT, M.D.
SAN FRANCISCO

Our knowledge concerning the permeability of the meninges has been rather limited on account of the difficulties involved in getting reliable data. When large doses of drugs can be given safely, it is easy to determine whether any part of them has passed into the spinal fluid. But in using potent drugs like arsenic or mercury, we find the proportion of the chemical to the body weight so small that even if any of it does pass into the cerebrospinal fluid, it is almost impossible to recover it. Since the advent of salvarsan, we have been enabled to inject relatively large doses of arsenic intravenously, and it is therefore possible to determine with greater ease and precision the permeability of the meninges to this drug.

After a careful study of the literature on this subject, I find that the authors have been unable, except in a few instances, to recover arsenic in the spinal fluid after its intravenous administration, and never after intramuscular or oral administration. Mercury has never been found except when it has been injected directly into the spinal canal. The only important drugs that have been found to pass through the meninges and ependymal cells are hexamethylenamin, uranin, chloroform, and in one case reported by Rotky,[1] bromin. Iodin has never been found even when administered in massive doses, according to Catton.[2]

Engman, Buhman, Gorham and Davis[3] report four cases in which no arsenic was found in the cerebrospinal fluid after the intravenous injection of 0.9 gm. of neosalvarsan. Citron[4] reports that no arsenic was found after intravenous or subcutaneous injections of salvarsan. Wechselmann[5] found arsenic in a few cases after the administration of salvarsan intravenously. Sicard and Block[6] recovered arsenic in three out of ten cases after intravenous, but none after intramuscular or subcutaneous injections. In one case, after giving 1 gm. of sodium cacodylate intravenously, Lorenz[7] found a trace of arsenic one hour later, but none six or twelve hours later.

From fifteen minutes to forty hours after giving salvarsan, 0.6 gm., Camp[8] removed the spinal fluid in seventeen cases and found arsenic in only one. Ravaut[9] found traces in six cases out of thirty-three. Benedict[10] reports traces of arsenic in four cases out of a large series. In two cases out of four, Hall[11] found arsenic twenty-four hours after the intravenous injection of 0.4 gm. of salvarsan.

From these reports we see that the presence of arsenic in the cerebrospinal fluid after its intravenous administration is variable, and some explanation of this variability must be sought. If we analyze the different theories regarding the formation of the cerebrospinal fluid, we must conclude that the most plausible source is the choroid plexus and possibly the ependymal cells. Under normal conditions we may assume that the meninges and ependymal cells are practically impermeable to the passage of all but a few drugs. What conditions, then, must obtain in order to cause these structures to lose their impermeability? Netter and Gendron[12] have shown that the injection of homologous serum into the spinal canal produces a leukocytosis. The injection of horse serum has the same effect, but also causes pain and fever. Viton[13] asserts that the meninges are not permeable except when irritated by the injection either of serums or of chemicals. Weil and Kafka[14] state that the permeability is very small normally, and only when the blood is heavily loaded, as in uremia, diabetic coma, jaundice, etc., or when patients are being treated with chloroform or uranin. The last two writers assert that the permeability is greatest in tuberculous meningitis, next greatest in epidemic meningitis, and third greatest in syphilitic meningitis. Eighty per cent. of the cases of cerebral syphilis show meningeal irritation. Hemolytic amboceptor will not pass through normal meninges, but in cases of paresis the writers find that 97 per cent. permit its passage.

Mestrezat and Sappey[15] believe that the meningitis which is provoked by the injection of electromercurol into the spinal canal creates a permeability that permits the passage of antibodies and other curative agents into the canal.

I believe that by reducing the intraspinal pressure we may also increase the permeability. It must necessarily follow that the removal of the greater portion of the cerebrospinal fluid must create a marked congestion of the meninges; and if the capillaries are dilated, they must permit the passage of their contents with greater freedom. Whether or not this theory is tenable, I have been able to demonstrate definitely that, in twenty-five out of twenty-six cases, arsenic is found in the cerebrospinal fluid twenty-four hours after its intravenous administration, if the spine is tapped almost dry shortly after the salvarsan or a similar product is given. In eighteen out of twenty-six cases, arsenic was found in the second portion of the spinal fluid which was withdrawn shortly after the intravenous injection. It is of great interest to observe that, in one patient who received four injections, arsenic was found three times only in traces. This man, while revealing many of the symptoms of tabes, had a negative Wassermann reaction in both blood and spinal fluid, as well as a negative colloidal gold chlorid test, and a negative Pandy, Nonne and Noguchi reaction.

The technic[16] which I employed is as follows: The patients were given intravenous injections of either salvarsan, neosalvarsan or arsenobenzol. Within twenty minutes the spine was tapped, and the fluid was allowed to run until it barely dropped, the quantity varying from 30 to 60 c.c. The fluid was collected in two portions. The first was tested for colloidal gold, Wassermann, Pandy, Nonne and Noguchi reac-

1. Rotky, H.: Ztschr. f. klin. Med., 1912, **75**, 494.
2. Catton, J. H.: Studies of the Spinal Fluid During Iodid Medication by Mouth, THE JOURNAL A. M. A., Nov. 4, 1916, p. 1369.
3. Engman, M. F.; Buhman, Rudolph; Gorham, F. D., and Davis, R. H.: A Study of the Spinal Fluid in One Hundred Cases of Syphilis, THE JOURNAL A. M. A., Sept. 6, 1913, p. 735.
4. Citron, J.: Berl. klin. Wchnschr., 1914, **51**, 332.
5. Wechselmann: Berl. klin. Wchnschr., 1912, **49**, 688.
6. Sicard and Block: Bull. et mém. Soc. méd. d. hôp. de Paris, Series 3, p. 894; Compt. rend. Soc. de biol., 1910, **69**, 624.
7. Lorenz, W. F.: Med. Rec., New York, 1912, **82**, 185.
8. Camp, C. D.: Jour. Nerv. and Ment. Dis., 1912, **39**, 809.
9. Ravaut, P.: Presse méd., 1912, **20**, 182.
10. Benedict: Am. Jour. Med. Sc., 1914, p. 699.
11. Hall, G. W.: The Presence of Arsenic in the Spinal Fluid, THE JOURNAL A. M. A., April 24, 1915, p. 1384.
12. Netter and Gendron: Compt. rend. Soc. de biol., 1910, **69**, 409.
13. Viton, J. J.: Semana méd., 1913, **20**, Part 2, pp. 1393-1397.
14. Weil and Kafka: Wien. klin. Wchnschr., 1911, **24**, 335.
15. Mestrezat, W., and Sappey, F.: Compt. rend. Soc. de biol., 1910, **69**, 239.
16. Barbat, J. H.: California State Jour. Med., 1915, **13**, 438.

tions, and the second portion for arsenic. In ten cases, 20 c.c. of blood were withdrawn within half an hour after the administration of the arsenic. This was allowed to clot, the serum was removed, and both clot and serum were tested for arsenic. Twenty-four hours after the spine was tapped, a second tapping was done, removing at least 10 c.c., though usually twice that amount was removed. This fluid was also examined for arsenic.[17]

Analyses showed that the blood serum contained more than five times as much arsenic as the clot contained, and that it averaged only about eight parts per million. This fact proved that within half an hour after the administration of 0.4 gm. of salvarsan, 75 per cent. is fixed in the body cells. The second portion of spinal fluid, which was withdrawn immediately after the administration of the salvarsan, showed 31 per cent. arsenic free and 27 per cent. with a trace, while 42 per cent. gave an average of 0.2 part per million. The spinal fluid withdrawn twenty-four hours later showed one case out of twenty-six arsenic free, two cases with a trace, and an average of 0.25 part per million in the remaining twenty-three cases.

These figures would indicate that arsenic can be made to pass into the spinal fluid in more than 96 per cent. of patients suffering from tabes or paresis, by the technic which I have described.

There has not been a sufficient number of patients treated as yet to warrant any definite statements as to the clinical value of this method; but when we consider that most of the patients were from the Relief Home and were considered absolutely hopeless, it appeared to me that my results warranted giving the matter a more extensive trial.

Two tabetics who were unable to walk, and who suffered from lightning pains, were relieved of pain and were able to walk more than they had for years. One patient came to my office more than a year after he had received five treatments, and asserted that he felt better than he had felt for a long time previous to the treatment.

In one case of beginning paresis in a patient, aged 35, whose primary infection dated back fifteen years, the difference between his former condition and the result obtained by withdrawing the spinal fluid after the injection of salvarsan was very marked. Four doses of salvarsan given at intervals of four weeks produced little effect on his mental condition, which he described as clouded. But he declared that, within a few days after the first treatment by my method, his head was clearer than it had been for years, and he requested another dose as soon as possible. After four treatments the Wassermann reaction in the blood and spinal fluid became negative, and the paresis curve, as shown by the colloidal gold test, has been rapidly subsiding, but is not yet negative.

In regard to the withdrawal of large quantities of spinal fluid in cases of paresis and tabes, we have had very little complaint from the patients, and the headaches following were no worse than those after the removal of small quantities. The patients were kept in bed twenty-four hours, and in only a few cases did they demand an anodyne. Those who did were already habitués who suffered lightning pains.

I believe that this method possesses many advantages over that of Swift and Ellis, and I feel that the clinical results will be found as good, if not better. The technic is very simple, and we avoid the dangers and discomforts that often follow the injection of foreign materials into the spinal canal. I am not prepared to say that the arsenic which is made to enter the spinal canal is the dominating factor in this method of treatment. I believe that the antibodies residing in the blood serum and passing into the spinal fluid play a more important part than the minute proportion of arsenic we find.

275 Post Street.

17. The arsenic estimations were made in the Hygienic Laboratory at Washington.

BLINDNESS FROM INDUSTRIAL USE OF A 4 PER CENT. ADMIXTURE OF WOOD ALCOHOL

JOHN M. ROBINSON, M.D.
DULUTH, MINN.

T. P., aged 29, a Greek of good physique, was referred, June 1, 1917, to my ophthalmic service at the Duluth Free Dispensary because of some difficulty which an optician had had in fitting the man with glasses. Complaint was made that objects looked smoky, and that the sight of the left eye had been failing for six weeks. Vision of the right eye was 20/30 and J.2; the color fields were much contracted; the field for white was moderately reduced on the nasal side, and greatly contracted on the temporal side. No definite scotoma could be located. The optic disk showed possibly a slight pallor. Vision of the left eye was reduced to fingers at 1 foot, except in the upper temporal quadrant, where fingers could be counted at 12 feet. The disk on this side was distinctly pink—a capillary congestion. Neither at this time nor later was there increased tension of either eye, or changes in the media or fundi beyond the disks. The vessels remained of normal caliber, with no swelling nor cupping of the nerve heads. The pupils were equal, and noticeably large, the dilatation being marked in reduced light; reaction to accommodation and light was equally sluggish. Twelve days later the vision of the right eye had fallen to 20/70, at which point it remained for about a fortnight, and then sank with the left, so that by September 15 the bare detection of finger movements was the best that either eye could do. Both optic disks in the meantime had become very white.

The family history was negative. The father and mother and nine brothers and sisters were all living and in good health. There had been no visual trouble among the grandparents, as far as known. The personal history was clear up to April 1; no injury, and no illness other than the usual diseases of childhood. Syphilis was denied, and evidences of it were lacking. The patient's wife was well, in her first pregnancy, and since has been delivered at term of a healthy child. The Noguchi test was negative. There was no ataxia. The patellar and other reflexes were normal. There were no signs of tabes or paresis. The teeth, tonsils, nasal accessory sinuses, gastro-intestinal and renal functions and the pituitary and thyroid glands were all given consideration.

The man had worked as a railway warehouseman up to March 1, at which date he obtained employment in a shoe-shining and hat-cleaning shop connected with a cigar stand. Here he worked for two or three hours each day dyeing hats with a commercial product called "Colorite"—a black liquid dye with a rather faint yet distinct odor of wood alcohol. The place was fairly well ventilated; there was also a door which was very frequently opened on the street. The temperature was about 70 F. His hands were spattered and stained black "about a quarter of the time." After five or six weeks of this he first began to note that objects looked smoky, while coincidently he became easily tired, perspired freely, and suffered slightly from nausea and a somewhat vague "stomach trouble." There was slight headache and dizziness, which, however, eventually disappeared. These symptoms were more or less pronounced when he came under my observation after six weeks. When last seen he was once more in good health, but totally blind. This picture

is, I believe, fairly typical of wood alcohol poisoning of the slow type. To make it a more perfect case, the findings should have included a scotoma, and "contracted retinal vessels," perhaps.

An original bottle of "Colorite," of which the man had used a dozen or more, was sent to the Bureau of Labor Statistics, Department of Labor. An analysis made at the Hygienic Laboratory disclosed 4 per cent. of wood alcohol, the coloring matter being reported as one of the indulin group, negrosin. Though analin black, as well as other of the analin dyes, may sometimes be classed as poisons, and have been known to exert deleterious action on the cornea and conjunctiva,[1] no instance of nerve atrophy has been reported as following the use of any of the indulins. The man polished few shoes: nitrobenzene seemed not to be a possibility. The wife and fellow workers stated that he was an abstainer from alcoholic drinks.

DANGERS OF WOOD ALCOHOL

In reporting one of the formidable series of imbibition cases from Russia subsequent to the abolition of vodka, Yakovleva[2] calls attention to the cumulative action of the poison. Tyson and Schoenberg[3] refer to over a hundred cases of death and blindness, up to 1912, following the inhalation of wood alcohol. Buller and Wood,[4] in their review of the subject, say, "It is also highly probable that in susceptible subjects repeated or even single methylated 'alcohol rubs' may produce poisonous symptoms, through absorption of the spirit by the skin." A few cases put on record since that report have corroborated this view. Campbell[5] mentions a patient who had his chest bathed once daily for two weeks with wood alcohol, resulting in light perception only in one eye, and vision 15/20 in the other, with contracted field. Woods[6] reported sudden blindness coming on in a man who had rubbed his legs with wood spirit each day for a month. Ziegler[7] mentions an instance in which a temporary amblyopia followed exposure to the fumes of wood alcohol for only one hour daily over a month's period. The findings of Loewy and von der Heide[8] that as small an amount of methyl alcohol as 0.2 per cent. in the inspired air may lead to absorption in the body in not inconsiderable quantities indicates the possible danger that exists in even a moderate exposure to the poison.

In a report relative to the possibility of poisoning taking place when the proportion of methyl alcohol is as small as 4 per cent., Dr. Alice Hamilton[9] quotes von Jaksch[10] to the effect that workers with denatured alcohol have shown symptoms of wood alcohol poisoning; Kobert,[11] who says that the disturbances of health complained of by these workmen are to be attributed in part to the piridin bases used in denaturing, and in part to the wood alcohol, and Goldsmith,[12] who agrees with Kobert, and who states that there was so much ill health and discomfort complained of by the men working with denatured alcohol that the workers sent petitions to the Reichstag, in consequence of which an inquiry was ordered.

Lewy[13] reports that for the time during which in Austria denaturing was done by means of a 2 per cent. admixture of wood alcohol and 0.5 per cent. piridin bases (the present U. S. Internal Revenue Formula 2), there were so many reports of sickness caused by the use of alcohol so denatured that the ministry undertook an investigation in Bohemia, where many of the Austrian industries are located. The report emphasized the fact that wood alcohol was being used as the denaturant in place of pure methyl alcohol, and that wood spirit contains large quantities of acetone, aldehyd, allyl alcohol, methyl acetate, and other volatile compounds, all of which are toxic in a higher or lesser degree; but the report admitted that the effect of methyl alcohol was undoubtedly the principal one. There were at that time a number of cases of amblyopia among the Bohemian workmen who had been using denatured alcohol.[14]

The U. S. Internal Revenue regulations prescribe two general formulas for denaturing: the one, as mentioned above, a trifle less than 2 per cent. wood alcohol, while Formula 1 provides for 10 parts of this spirit and 1 part of benzene to 100 parts of ethyl alcohol, each by volume—a mixture which, though suggested by no less authority than Dr. Wood,[15] would seem from the Austrian account to be fairly dangerous. It has also been set forth as an argument in favor of the use of wood alcohol as a denaturant that a 10 per cent. "methylated spirit" has for a long time been used in Great Britain, and that no case of amaurosis has been reported from its industrial use. I spent part of my apprenticeship in the English clinics, and again more recently was relief house surgeon at Moorefields. The vast majority of British workmen who live in or near the large centers go to the hospital clinics for their eye treatments; the clinics are usually crowded; the time for investigation is limited, nor is it common practice to follow the dubious case back to the home or workshop. It was found in reviewing the histories of 300 optic atrophy cases—an opportunity afforded through the courtesy of some of the Moorefield staff—that even when the aids of Wassermann, Roentgen and Onodi had been taken advantage of, 15 per cent. of the optic nerve degenerations remained unexplained.

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2. Yakovleva, A. A.: Cases of Loss of Vision from Eau de Cologne, Denatured Alcohol and Similar Substitutes for Whisky, Russk. Vrach, 1915, **14**, No. 25; abstr., THE JOURNAL A. M. A., Oct. 9, 1915, p. 1316.
3. Tyson and Schoenberg: Arch. Ophth., May, 1915.
15. Wood, C. A.: Death and Blindness from Methyl or Wood Alcohol THE JOURNAL A. M. A., Oct. 22, 1904, p. 1220.
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7. Ziegler, Lewis: Arch. Ophth., 1914, p. 516.
8. Loewy and von der Heide: Biochem. Ztschr., 1914, **65**, 230.
9. Hamilton, Alice: Report rendered to the Commission of Labor Statistics.
10. Von Jaksch: Die Vergiftungen, Vienna, 1916, p. 277.
11. Kobert: Lehrbuch der Intoxikationen, p. 600.
12. Goldsmith, in Weyl's Handbuch, **8**, 830.
13. Lewy, E.: Med. Chir. Rundschau, 1891, p. 508.
14. Horbaczewski: The Damage to Health from the Industrial Employment of Alcohol Denatured with Wood Spirit, Das Oesterreichische Sanitätswesen, 1911, **23**, 69, referred to by Hamilton (Footnote 9).
15. Wood, C. A.: Death and Blindness from Methyl or Wood Alcohol Poisoning, THE JOURNAL A. M. A., Nov. 30, 1912, p. 1962.

Child Welfare Legislation in 1916-1917.—According to the Thirteenth Annual Report of the National Child Labor Committee, both good and bad legislation for child welfare was enacted during the years named. Among the states which weakened their child labor laws were Connecticut, Massachusetts, New Hampshire and Vermont, authority being given to some official to relax the enforcement of these laws during the war. New York and California gave authority to relax their compulsory education laws. Eleven states strengthened their child labor laws. Among them were Delaware, Illinois, Kansas and Texas, where new laws were enacted, and Wisconsin, which added domestic service to the list of occupations for which work permits are required. Compulsory education laws were improved in six states, and mothers' pension laws were enacted for the first time in Arkansas, Delaware, Maine and Texas, and amended in ten other states. There are now thirty-four states which have mothers' pension laws.

THE VENEREAL DISEASE PROBLEM IN CALIFORNIA

H. G. IRVINE, M.D.

Director of the Bureau of Venereal Diseases, California State Board of Health; Assistant Professor of Dermatology and Syphilis, University of Minnesota Medical School

SAN FRANCISCO

California was one of the first states to make an organized effort to put into effect the program proposed by the War Department and Surgeon-General's Office to combat venereal diseases. It was initiated by the organization of a bureau of venereal diseases under the state board of health. As it is believed that the program adopted for carrying on the work is one of the most rational proposed by any state up to the present, it seems desirable at this time to publish some of the details of the work that those interested in other states may benefit.[1]

The bureau as organized has a director, two sanitarians, and a social service director. The director and sanitarians are physicians. Immediately after the organization of the bureau, the state board of health passed a regulation making all local and county health officers inspectors under the state board. This gave a very efficient state-wide organization, which at once became available to promote the work of the bureau in all communities.

OUTLINE OF THE WORK

The work proposed and thus far carried out can perhaps be most intelligently described by a consideration of each item of the program.

DIRECT CONTROL

1. To secure the reporting of cases of syphilis and gonococcus infection, together with the probable sources of infection, by physicians and by the medical officers of the Army and Navy.

California already had a law requiring the reporting of syphilis and gonorrhea, but since this work has started, reporting has been so stimulated that reports[2] of these diseases now outnumber all other diseases except tuberculosis.

Arrangements were made for the medical officers of the Army and Navy to inquire into and report all sources of infection with as definite data as possible concerning the name and location of the infecting party. These reports are made daily to the local health officer, who in turn gives the information to the police that the woman, usually a prostitute, may at once be apprehended, examined, and isolated for treatment. In recently checking up this work, the bureau found that out of seventeen reports for San Francisco with definite data, seven women had been placed under treatment in the isolation ward of the hospital.

2. To investigate, with the assistance of local officials, any suspected foci of infection, and to isolate infectious persons whenever it is necessary to prevent their spreading disease.

It is expected that clinics or private physicians may report sources of infection or patients whose conduct they cannot control, and in this event the bureau, through the medium of its sanitarian, will investigate and take the necessary action to isolate such persons.

3. With the cooperation of cities and counties to care for the men and women isolated on account of venereal disease in public isolation hospitals until the patients are no longer infectious.

At present there are available thirty beds in the San Francisco hospital for isolation cases. In Los Angeles the city council has approved a plan and appropriated $25,000, which will make fifty beds available for isolation purposes. This includes also a further extension of the night clinic already in operation under the city board of health.

In San Diego, $10,000 has been secured to build an isolation hospital providing for fifty beds.

These facilities have been secured by the active cooperation of the bureau with the local health officers, Dr. Hassler, Dr. Powers and Dr. Crawford, and the city officials in providing the funds necessary. Many smaller communities throughout the state also have made provision where necessary.

It should be remembered that it is quite impossible in most cases to keep these patients in the hospital a sufficient length of time to complete their cure; therefore it is necessary to arrange for ambulatory treatment, and rules[3] and regulations concerning their control and discharge.

4. As far as possible to secure the medical examination for venereal diseases of male and female prisoners and other appropriate groups, and to provide for their isolation and treatment so that they will not spread disease when released.

The bureau has been attempting to make a survey of the various institutions of the state, and hopes shortly to stimulate better and more thorough work where indicated.

5. Through the operation of this plan to prevent the heretofore common evil of one community "passing on" to another its undesirables, thereby multiplying foci of infection.

It has been a common practice, especially in the smaller communities, to give public women when arrested twenty-four hours to get out of town; now it is proposed that such patients be first examined, and if found diseased, placed under treatment. This plan is now being followed by practically all cities in the state through cooperation of local judges and health officers.

6. To focus on this subject the social forces necessary to give former prostitutes, after they have been put into good physical condition, an opportunity to enter into productive occupations under conditions fair to themselves and to the community.

This campaign against venereal disease must include as well a campaign against the business of prostitution, and there must be no winking—no decent community is going to support with its public opinion anything that savors of regulation in any sense of the word. It must be a campaign aimed at removing the prostitute and placing her where she belongs, be that jail, institution, reformatory or home; but as the first step in this work, we must realize that, practically speaking, every one of these women has syphilis, gonorrhea or both, and proper isolation and treatment are necessary. She must be mentally examined and permanently confined if found deficient. Social workers must have opportunity to study and investigate her story, and give her a chance under probation if such is indicated. Realizing that few of these women will voluntarily remain under treatment a sufficient length of time to bring about a cure, they must be kept under

1. Copies of the program, rules and regulations, etc., will be furnished by the Bureau of Venereal Diseases, 512 Underwood Building, San Francisco.

2. For the month of September, 1917, 311 cases of gonorrhea and 142 cases of syphilis were reported.

3. Dr. Hassler, health officer for the city and county of San Francisco, has printed rules and regulations.

strict health regulations, perhaps with authority from the court.

It cannot be too strongly emphasized that there must be a social service director in connection with this work. Public opinion demands it, and will support much of the program that it is not interested in on account of it. The need[4] of women's courts, women probation officers, detention homes, and industrial farms for women is going to be brought home to every community in which this work is carried on.

PUBLIC OPPORTUNITIES FOR DIAGNOSIS AND TREATMENT

1. To investigate all clinics or hospitals treating venereal diseases, and to bring into existence adequate day and evening clinics and opportunities for hospital treatment for syphilis and gonorrhea.

It is well known that few public hospitals throughout the country admit venereal diseases as such, and it is equally well known to many that they have numbers of such cases in their wards in spite of themselves. Every effort is being made to urge these hospitals to arrange for a department of venereal diseases, and to admit these patients under the same conditions that govern other diseases. This means not only a sufficient number of beds for both male and female patients, but also the organization of a competent staff under whom the best of treatment may be carried out. Patients admitted for other diseases and found to have gonorrhea or syphilis should also be placed under treatment and urged by the social service department to follow up this treatment after leaving the hospital. Most venereal disease patients are best treated in the outpatient service, and in many cities facilities for such treatment are entirely lacking or at best inadequate. So long as this campaign is a matter of public health, it seems logical that when other opportunities are lacking, local health departments should be urged to inaugurate a dispensary service. A night clinic is especially desirable; and since it serves for the most part patients who are at work, it may be a pay clinic, such as the Boston City Dispensary or the Brooklyn Hospital Dispensary; or it may be a free clinic also conducted by the board of health.

It has been proved that the bureau can be of a great deal of benefit in securing financial assistance for such hospitals and clinics; and owing to the fact that its staff is trained in venereal diseases, it can also be of considerable assistance in organizing the work. Too much emphasis cannot be placed on the benefits to be obtained by making it easy for people to get treated.

2. To make a list of accredited clinics in which venereal diseases are treated, accrediting only those which reach high standards in staffs, equipment and results.

It is quite as necessary that clinics be good as well as sufficient in number. It is unfortunately true that even many clinics run by our universities are wofully poor. About two years ago, I investigated clinics treating syphilis in ten Class A colleges, and embodied a report of this work in a paper[5] presented in 1916. Not 50 per cent. of these clinics would come up to the standards suggested by the New York City Board of Health, or to those adopted recently by this bureau. Since that publication many clinics have improved; there, are, however, many clinics throughout the country which are taking care of very few patients, when improvement in their staff, equipment and social service work would increase their value tenfold. This may be illustrated by my experience at my clinic at the University of Minnesota. By bringing the clinic up to a recognized standard, the daily number of cases of syphilis were increased in one and one-half years from eight or ten daily to as high as sixty-seven—out of all proportion to the increase in the dispensary as a whole. It is obvious, then, that having more clinics and having them better will result in getting many more cases correctly diagnosed and well treated.

3. To purchase and issue, without charge, to approved public hospitals and clinics, salvarsan or approved substitutes, for use in making cases of syphilis noninfectious in the shortest possible time.

One big problem in adequately treating patients with syphilis has been the securing of salvarsan or equivalents. Out of the budget for the bureau it is estimated that $10,000 will be used in supplying salvarsan. In order to stimulate efficiency in the clinics, this salvarsan will be supplied only to those clinics which meet with the bureau's approval, or to health officers for cases isolated under their orders.

The realization on the part of public officials that paresis[6] can be prevented by adequate early treatment, and their enlightenment on what these patients cost the community a year for asylums, ought to make it easy to secure public funds for salvarsan.

In order that this salvarsan might be immediately available for patients needing it, the bureau temporarily accredited a number of clinics which seemed certain within a short time to be approved. This time has been set as January 1, and before that date the bureau will investigate these as well as all other clinics applying, and will finally approve only those that actually come up to its standards.

4. To arrange with city laboratories to give free diagnostic tests for syphilis and gonococcus infections, and to encourage the more general use of the free Wassermann tests and other tests available at the bureau of communicable diseases.

The state board of health has for some time offered free Wassermann tests at its laboratory maintained under the bureau of communicable diseases. Since the work of this bureau was started, several cities have arranged to furnish this service. It has been very hard for the Army and Navy to supply necessary laboratory facilities, and many Army and Navy officials have appreciated our offering them the bureau for this service. By having this service at its command, the bureau has arranged to have Wassermann surveys made at several of the smaller stations. These statistics should prove very valuable both to the Army and to the Navy and to all interested in the problem of venereal diseases.

EDUCATIONAL

1. To issue printed pamphlets, cards and placards of information relative to the prevention of venereal disease, and to cooperate with the Army and Navy and other agencies in giving talks to appropriate groups.

The state board of health, before the existence of the bureau, placed many placards regarding venereal diseases in public toilets, etc., and also printed and dis-

4. For those interested, "The Slavery of Prostitution," by Maud Miner, is suggested.

5. Irvine, H. G.: Notes on the Teaching and Treatment of Syphilis, THE JOURNAL A. M. A., Dec. 30, 1916, p. 1987.

6. California spent over $160,000 in 1916 to care for general paretics in asylums.

tributed small cards containing information for persons afflicted. Two new pamphlets have been written and will be distributed by the bureau. One, on the modern treatment of syphilis,[7] for distribution to the medical profession, is intended to answer the question as to what is adequate treatment for syphilis. The other is a pamphlet to be distributed to patients by clinics and private practitioners; it contains much interesting information regarding syphilis and gonorrhea, and directions to the patient. At the bureau's suggestion, the state board of health has passed a regulation requiring that this or other approved literature be given to every patient infected with syphilis or gonorrhea.

Duplicate sets of lantern slides on venereal diseases and social hygiene have been secured through the American Social Hygiene Association. These will be lent to the various military and naval stations in the state, or to any civilian organization that wishes them. It is also proposed that the bureau pay the traveling expenses of volunteer lecturers when it seems desirable. The medical staff of the bureau is expected, of course, to be doing educational work all the time with both the profession and the laity.

2. To cooperate with the Military Welfare Commission in the suppression of prostitution as the principal source of venereal diseases, but avoiding confusion of the campaign against venereal diseases with the movement against vice as a strictly moral issue.

3. To oppose any local plan for licensing prostitution or issuing certificates of health to prostitutes, by showing that this is in conflict with modern methods of control of venereal diseases, and to substitute the above program, which is entirely consistent with the suppression of prostitution.

Liquor, prostitution and venereal diseases are so inseparably bound together that these two paragraphs may well be considered together.

The situation in California has been particularly opportune in that Mr. French, the executive secretary of the California Military Welfare Commission, is also the local representative of the Fosdick commission. The cooperation of Mr. French and the director of the bureau has accomplished much more than either could have alone. I wish to emphasize this fact, because it would seem to be a very valuable suggestion for those organizing this work in other states.

To my notion, law enforcement in regard to liquor and repression of prostitution has the greatest effect on reducing venereal disease of anything that can be done quickly. Just the minute public officials, such as police, police court judges and the district attorney, see fit to cooperate and determine to enforce these laws, the number of daily exposures will at least be cut in two, and this must at once have its effect on disease.

There are unfortunately still many medical men who do not seem to realize that every prostitute is a disease carrier, that they all have syphilis, gonorrhea, or both, and because of this lack of knowledge, still hold to the licensed prostitute and the segregated district. These men, and I have met many, ought to learn that license never included over 10 per cent. of the prostitutes, nor did any segregated district ever house more than 10 per cent. of those known to the police as plying their business in the community.

7. Copies of these pamphlets may be had by writing the Bureau of Venereal Diseases.

The plan proposed by Mr. French and myself, and already in effect in San Francisco, Los Angeles, San Diego and a few smaller communities throughout the state, is as follows: All women arrested as prostitutes or vagrants are given jail sentences of from thirty to 180 days if found guilty. Before sentence is imposed, a very careful examination is made by a well trained gynecologist to see if there is clinical or microscopic evidence of gonorrhea, and a Wassermann test is made in every case. If disease is found, the case is continued and the patient sent to the hospital for treatment. If no evidence of disease is found, sentence is imposed unless the woman probation officer, who has meanwhile investigated the case, recommends the woman be placed in her charge to be given work, housed, or returned to her home. In the case of women going to the hospital, they are returned to the court at once after their treatment and handled just as those not diseased, except that arrangements are made to continue their treatment as ambulatory cases when necessary. Any woman placed on probation and caught violating any rules laid down for her is summarily given a six months' jail sentence. Arrangements are also made to have mental tests given in order that proper institutional care may be recommended when necessary. Men exploiters are to be handled the same as the women.

It will readily be seen that this is in no sense a plan to make prostitution safe, but rather a rational plan to withdraw permanently every prostitute possible from the market; the medical treatment is but the first step in rehabilitation. The social service work in connection with this plan is directed and coordinated by the bureau through its social service department. The medical examinations and treatment are under the local board of health.

To show how this works out, I will quote from a report of Judge Oppenheim,[8] who had charge of the Women's Court in San Francisco for the month of November. Out of 156 women brought before the court, fifty have been placed on probation, and are at work under the supervision of the probation officer. Thirty have returned to husbands or relatives; these also are on probation. Twenty have been returned to relatives outside the city. The other fifty-six are in jail or the hospital with their cases not finally disposed of.

CONCLUSION

Several points should be emphasized. Such a bureau is perhaps the most logical organization to carry on this work. Its director should be a man specially trained in venereal disease work, he should have enthusiasm for public health work, and he should have some knowledge of administration. A social service department is an exceedingly important part of the organization. The work should be done under the state board of health in order that it may have the authority and organization of this board at its command.

In connection with the war work it is highly important that this bureau and the work of the Fosdick commission be in closest cooperation.

A great deal of credit should be given to the men who drew up this program, and to Dr. W. A. Sawyer, secretary of the California State Board of Health, who initiated the work and who has been of great assistance to me since I have been director.

8. San Francisco Examiner, Dec. 2, 1917.

RAPID METHOD FOR IDENTIFICATION AND ISOLATION OF MENINGOCOCCI FROM THE NASOPHARYNX *

PETER K. OLITSKY, M.D.
NEW YORK

There is no subject in practical bacteriology being more actively pursued than that of the identification of the meningococcus in plate cultures prepared from the nasopharyngeal mucous membrane. This situation has been brought about through the assembling of the National Army and the National Guard, and the appearance of epidemic meningitis and meningococcus carriers in some of the Army camps. Since the detection and the segregation of the carriers constitute one measure of control of the disease, it is in the highest degree important to reduce to the minimum the time and work incident to their discovery. In this way the separation of the men from their commands is reduced, and the work of the hospital laboratories lightened. The method given here is offered as serving to save time by simplifying the identification of meningococci in mixed cultures in Petri plates. The method proposed employs a fluid medium which serves to eliminate other organisms resembling the meningococcus in about twelve hours and to reduce the full time required to identify the latter by at least one day.

METHOD

To 1 per cent. glucose broth (made from veal infusion and having an acidity of from 0.5 to 0.7 + phenolphthalein) is added 5 per cent. of unheated, sterile, clear normal horse serum. This medium is then distributed in small tubes (from 8 to 10 mm. diameter, and 9 cm. length), 1 c.c. being placed in each tube.

Suspicious colonies on the plate cultures are fished and seeded, a colony to each tube.

These small tubes are then incubated twelve hours (or overnight, if more convenient). At the expiration of this time, they will show the distinctive characters of the organism in question, and at this early period "negatives" may be determined.

The bacteria that complicate the isolation and identification of the meningococcus on plate culture are the *Micrococcus flavus, crassus, pharyngis-siccus* and *catarrhalis;* the *B. influenzae,* and an unclassified gram-positive bacillus; and occasionally, in the hands of beginners, the staphylococci and streptococci.

Owing to the presence of normal horse serum in the medium, practically a normal horse serum control is at hand, so that the *M. flavus, crassus* and *pharyngis-siccus,* and the unclassified gram-positive bacillus will show firm agglutination. While the bacillus culture may show slight turbidity over an agglutinated sediment, the diplococci cultures show clear supernatant fluid over agglutinated masses of those organisms. As hemoglobin is absent, *B. influenzae* fails to grow. *M. catarrhalis* grows with a dense turbidity, and often shows a pellicle on the surface. The gram-positive staphylococci grow also with a dense turbidity, and show agglutinated masses in the sediment and often a surface pellicle as well. The streptococci grow with clear or turbid supernatant fluid, but show an agglutinated sediment.

The meningococci, on the other hand, grow in a characteristic manner. The fluid becomes faintly turbid, and a slight sediment forms; but, and this is all important, the sediment emulsifies uniformly when the tube is shaken.

The cultures in the fluid medium are divided into two sets by simple inspection. One set is readily excluded from being meningococci on the basis of the characters described above. The other set, which exhibits the qualities of the growth of the meningococcus, is regarded as suspicious, and to each of the tubes is added 0.1 c.c. of a 1:10 dilution in 0.85 per cent. saline solution of a high-titer polyvalent antimeningococcic serum. The tubes are then incubated in a water-bath (not in an incubator) at from 37 to 38 C. for two hours.

The reading of the tubes is definite and distinct. Those containing meningococci exhibit distinct agglutination; those containing other organisms remain unchanged. The readings are checked by means of films stained by Gram's method. All the tubes recorded as positive will show agglutinated masses of gram-negative diplococci of typical meningococcus morphology.

From the tubes containing the agglutinated meningococci, transplants on solid mediums may be prepared for further identification or for stock cultures. The last procedure is not necessary in order to detect or exclude the suspected meningococcus carriers.

ADVANTAGES OF THE METHOD

1. The sparing of culture medium: hence more colonies from a given plate will or may be investigated.

2. The rapid growth of organisms in the small volume of medium, thus permitting the discrimination of negative and suspicious growth in about twelve hours.

3. The use of normal horse serum for enriching the medium and for the elimination of a variety of gram-negative micrococci that are subject to nonspecific agglutination. Among the latter is especially *M. flavus.*

4. The sharpness and rapidity of the reaction of agglutination produced by the polyvalent antimeningococcic serum with the meningococcus at the temperature of from 37 to 38 C. The substitution of a water-bath of that temperature for the thermostat at 55 C., as employed in the usual agglutination tests with meningococci, is a great simplification, especially under conditions of Army work.

5. The simultaneous yielding of pure cultures of meningococcus for stock or further study, provided all the steps have been conducted in a strictly sterile manner.

* From the Laboratories of the Rockefeller Institute for Medical Research.

Earnings and Infant Mortality.—That the chance of life of the baby grows appallingly less as the father's earnings grow smaller is shown by the combined results of the bureau's studies of infant mortality among 13,000 babies in eight American cities—Johnstown, Pa.; Montclair, N. J.; Manchester, N. H.; Brockton, Mass.; Saginaw, Mich.; New Bedford, Mass.; Waterbury, Conn., and Akron, Ohio. One fourth of all the fathers earned less than $550 a year; in these families every sixth baby died. Only about an eighth of the fathers earned $1,050 or more; of their babies only one in sixteen died. The rise of prices and the disorganization of social and industrial life with the war accentuate the importance of this persistent relation of income to infant mortality. —*Bulletin,* Children's Bureau.

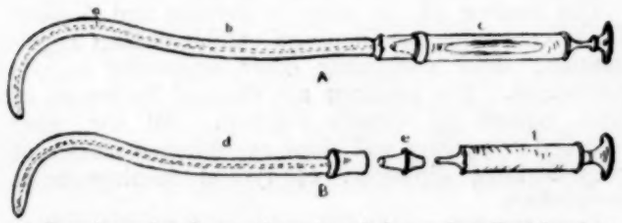
Clinical Notes, Suggestions, and New Instruments

AN IMPROVEMENT ON THE BANGS SOUND SYRINGE

MAX HÜHNER, M.D., NEW YORK
Chief of Clinic, Genito-Urinary Department, Mount Sinai Hospital Dispensary

The Bangs sound syringe is practically a combination of sound and syringe. It consists of a series of sounds through the center of which is bored a small tunnel, just large enough to hold about 20 minims. The end is so constructed that the universal syringe can be applied to any of the sounds.

The instrument would be ideal were it not for the fact that the syringe has the old fashioned leather packing, which must be renewed every few months.



A, Bangs' sound syringe: *a*, inner tunnel; *b*, sound; *c*, Bangs' syringe. *B*, modification whereby Bangs' sound (*d*), through the medium of the adapter (*e*), may be used with a Lüer syringe (*f*).

To avoid this, I have devised an adapter which fits into any of the sounds, but the other end of which is so shaped as to fit into any size Lüer all glass syringe. With this adapter it is possible to use the Bangs sound with a Lüer syringe.

It would be well if in future the end of the sounds would be shaped like the adapter here presented, so that they may be used directly with the Lüer syringe. Since, however, most genito-urinary specialists are at present in all probability in possession of a series of Bangs' sounds, which it would be unwise to discard, the adapter, which is inexpensive, will be found very useful, particularly as only one adapter is necessary for all the sounds, irrespective of size.

320 Central Park West.

REPORT OF A CASE OF SYPHILIS OF THE BLADDER

F. M. DENSLOW, M.D., KANSAS CITY, MO.
Fellow of the American College of Surgeons

July 23, 1916, I was called in consultation by Dr. Chett McDonald to see a man, aged 23, who complained of very frequent and painful urination, with much tenesmus. He gave a history of venereal sore, diagnosed chancroid, two years before, and gonorrheal infection of the urethra beginning a year later and persisting to the date of consultation. He had been in the Navy and had been sent to the hospital at Great Lakes. He stated that he had had two negative Wassermann tests and had been under treatment while there, and later at Bremerton, Wash., with sounds, irrigations of permanganate, and instillations of silver nitrate. He had obtained his discharge from the Navy, and was at the home of his parents.

There was a scar of the glans where the chancroid had been. There was a slight purulent discharge from the urethra, and urination was followed by a mucous discharge at the end of the act. The frequency was from about every half hour to one hour day and night. The prostate was not enlarged, but was fixed, indurated, and quite tender to palpation.

The patient was given sitz baths, forced water and hexamethylenamin, in combination with uva ursi and triticum. Irrigations were attempted, but were too painful. The strangury increased until it was practically continuous. At times while the patient was straining, the rectum would prolapse, and protrude for 4 inches or more.

He was taken to the hospital, August 28, and examined by cystoscope under ether anesthesia. Only 1 ounce of fluid could be introduced into the bladder. All that could be made out by cystoscopy were some papillomatous masses at the vesical margin, some of them protruding down into the prostatic urethra. The bladder mucosa was intensely congested and bled easily, thus preventing further examination.

August 29 I opened the bladder suprapubically under ether, and found its mucosa studded, especially at the base, with condyloma-like nodules, apparently deeply involving the bladder wall. There were forty or more of such nodules, and some of them, especially those near the meatus internus, were long, some as much as half an inch in length. The bladder was curetted with a sharp curet, and as many as possible of the nodules destroyed. The tissue thus removed was submitted to Dr. William K. Trimble, sections cut, and a diagnosis of syphilitic condyloma made. A Wassermann blood test done by him on the following day was strongly positive.

The patient was immediately put on intramuscular injections of mercuric salicylate. He complained of the pain of the injections, and was changed to the internal treatment (mercuric chlorid, 1 grain; potassium iodid, 1 dram; essence of pepsin, 1 ounce, from half a teaspoonful to a teaspoonful in half a glass of water after meals).

The suprapubic drainage tube was removed, September 10; the wound was clean and the patient much benefited by the improved sleep and rest.

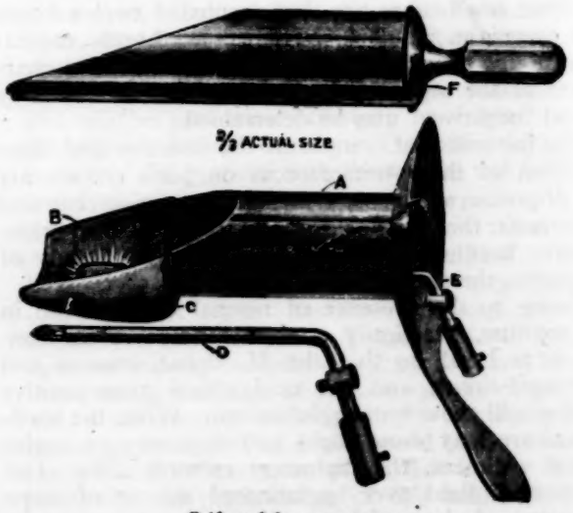
September 19, the wound had closed, but irrigations of 1 per cent. phenol (carbolic acid) solution, followed by boric acid solution, were kept up until Oct. 1, 1916.

Improvement was rapid under the mixed treatment. The bladder capacity improved until in three months or less he could go all night without arising. The urine gradually cleared up. He is now back in the Navy.

SELF-RETAINING ANOSCOPE

J. RAWSON PENNINGTON, M.D., CHICAGO

If there is any one point in the region of the anus, rectum and sigmoid that is of more clinical importance than another, it is the anal canal. Yet, since the description of my inflatable rectal speculum (pneumatic proctoscope) was published,[1] in 1899, most of the inventive genius has been exerted toward improving that instrument rather than the anoscope.



Self-retaining anoscope.

Of the diseases that occur in these organs, 75 per cent. or more involve this canal, and practically all of them are infective. Because of the functions of the muscles that encircle and close this canal, a satisfactory inspection of the

1. Pennington, J. R.: Inflating Rectal Specula, THE JOURNAL A. M. A., Sept. 30, 1899, p. 871.

field, and the administration of treatment thereto is very difficult with the ordinary anoscope, which is usually conical and not self-retaining.

Numerous instruments have been designed to aid in inspecting this canal, but none are satisfactory. The anoscope illustrated herewith is self-retaining, and gives a more complete and satisfactory view of this field than any other anoscope of which I have knowledge. It consists of a tubular instrument (*A*), with the distal end cut off on the slant (*B*), which increases the field of inspection; a bulbous enlargement (*C*) on the reverse side by which it is retained in position; an adjustable electric light (*D*) ensconced in a groove (*E*) which can be readily cleaned, and which greatly lessens the danger of breaking the lamp; and an obturator (*F*).

The instrument is introduced in the same manner as any other anoscope or rectal speculum. Since its introduction carries or pushes the pectinate line and the anal skin with it to a certain extent, it is well before removing the obturator to grasp each buttock with the full hand and pull it out, so as to bring the field into closer view.

As a rule, the left lateral or Sims position, with the hips slightly elevated, is the best posture for anoscopy. To inspect the different fields, one can withdraw and reintroduce the instrument, or may reintroduce the obturator without withdrawing the instrument, when the anoscope can be easily turned to any position desired, and the obturator again withdrawn. This procedure may be repeated as often as is necessary.

31 North State Street.

TWO ACCIDENTAL DEATHS FROM UNUSUAL PENETRATING WOUNDS

EDWARD H. HATTON, M.D., CHICAGO
Coroner's Physician, Cook County, Ill.

Death as the result of either external or internal hemorrhage is a rather common accident. Occasionally these accidents are associated with unusual features which justify reporting.

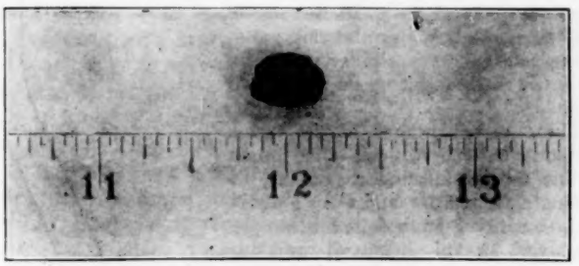
CASE 1.—A section hand employed driving spikes with a large steel hammer was struck on the left side of the neck by a steel fragment from the hammer he was using. There was some hemorrhage from the external wound, but more blood was coughed up, apparently from the air passages. The man was put into an ambulance and hurried to the nearest hospital, but died before it was reached, twenty minutes after the accident occurred.

At the necropsy there was found a shallow incised wound just over the lower border of the mandible on the left side, five-eighths inch long, and a smaller wound five-eighths inch to the left of the midline and one-half inch below the prominence of the thyroid cartilage. The course of the steel fragment was traced through the subcutaneous tissues, the superficial anterior cervical muscles just below the thyroid gland, and just anterior to the trachea into a deep pocket between the trachea and the common carotid artery on the right side. Both the common carotid and the trachea were ruptured, and these defects actually faced each other, so that the hemorrhage was for the most part directly into the trachea. The opening through the muscles to the superficial part of the wound was obstructed by a valvelike action of the torn muscles. The tissues of the anterior cervical region were infiltrated with blood under considerable pressure. The lungs were edematous, and the air passages contained much blood.

The steel fragment recovered was nearly oval. Its diameters were three-eights and five-sixteenths inch. Its thickness was one-eighth inch, and the edges were quite sharp and shaped like those of a knife. It weighed 9 grains.

CASE 2.—A boy, aged 11 years, unaware of its existence, crashed through a plate glass door. This doorway was an entry at the foot of a short flight of stairs, and the door frame without the glass had been installed for some time. Residents of the building had acquired the habit of passing through the frame rather than opening the door. The plate glass was installed and was without placard or any other device to call attention to the change, and it was soon after this that the victim of the accident plunged into the door with all the momentum gained by running down the stairs to which this door led.

The clothing at the level of the waist in front was blood soaked and contained many fragments of glass. There were two puncture wounds at the lower costal border, each just large enough to admit the tip of my first finger. One was one-half inch to the right of the midline, the second 2½ inches to the left. The former was traced into the abdominal cavity and the liver. The wound in the liver was one-half inch in depth. The second wound continued upward into the thorax between the fifth and the sixth ribs. There were defects in both the pericardium and the left pleural cavity,



Steel fragment, actual size, recovered in Case 1

and an incised wound of the apex of the heart penetrating both ventricles. It was three-fourths inch long. There was fluid and partly clotted blood in the pericardial and left pleural cavities, and a comparatively small amount in the abdominal cavity. There was marked anemia of all organs and tissues.

Immediately after the accident, those near at hand were attracted by the boy's loud cries, and it appears that he lived for about five minutes after the accident.

6032 Stony Island Avenue.

SERIOUS RESULTS FOLLOWING THE ADMINISTRATION OF NEODIARSENOL

THOMAS W. ROSS, M.D., PORTLAND, ORE.

A soldier, aged 24, weighing 145 pounds, presented himself with a solitary ulcer of five days' duration, the exudate from which on examination by the India ink method revealed the *Spirochaeta pallida*. Neodiarsenol in a dose of 0.45 gm. in 10 c.c. of sterile distilled water was given intravenously in my office. It was noted that the powder was extremely slow in dissolving and that the resulting solution was mahogany colored.

Immediately after the administration, the patient complained of a choking sensation and intense pricking pains in the soles of the feet and palms of the hands which he described as being similar to the sensation of being beaten with a stiff bristle brush.

While I was searching for some epinephrin, the patient reeled out of the chair in which he had been sitting and fell prone on the floor, unconscious. He remained in this state for about two minutes, and then rolled on the floor in agony, complaining of pains in the abdomen which he afterward likened to being crushed in a vise. After about five minutes of this pain he vomited, not severely, following which he was able to speak. Two hours later in his room an alternate chill and fever reaction of a severe type began and kept up for the succeeding five hours, after which the patient gradually recovered from the untoward effects of the dose of neodiarsenol. Some days later he returned to my office and was given a dose of 0.3 gm. novarsenobenzol (Billon) without reaction.

SIMPLE APPLIANCE FOR TRAINING INFANTS TO STOOL

CARY EGGLESTON, M.D., NEW YORK

It is the common practice for physicians and the "baby books" to recommend the training of infants to have regular movements of the bowels by the insertion into the anus of the end of an ordinary clinical thermometer, or by the use of small glycerin or soap suppositories. The use of suppositories is objectionable, owing to their expense and the possibility of irritating the delicate mucous membrane through their hygroscopic properties, when they have to be employed very frequently. The soap suppository is liable also to prove irritating if used often, and unless a fresh suppository is made for each occasion, the practice is unclean and not hygienic. The clinical thermometer is expensive; it is delicate and very likely to be broken, possibly within the anus; and, being straight, it is clumsy when the infant is made to sit up on a chair or chamber.

Appliance for training infants to stool.

These disadvantages of the usual methods led me to seek some other means for stimulating the desire to evacuate the rectum, and after a number of trials I have found a simple glass rod, suitably bent and rounded, to meet every requirement and to be free from the disadvantages of the other methods, as well as more convenient. The appearance of the rod is shown in the accompanying illustration. The dimensions are: diameter, 5 mm.; length of short arm, 3 cm.; length of long arm, or handle, 7 cm.

Preparatory to use, a small amount of plain petrolatum (liquid or solid) is applied to the short arm of the instrument as a lubricant, and this is then inserted into the anus to near the bend. When the infant is in the sitting position, the bend permits the rod to be inserted and held without striking the sides of the vessel.

412 West End Avenue.

AN ASSISTANCE TO THE STUDY OF TISSUES CONTAINING NERVES

SYDNEY M. CONE, M.D., BALTIMORE
Captain, M. R. C., U. S. Army
LIVERPOOL, ENGLAND

In my work at the Alder Hey Military Orthopaedic Hospital, Liverpool, the surgery of injuries to the peripheral nerves proved the most interesting and difficult in the service. Nerves partly torn, scraped or bruised, and some completely severed and lost in old scars have come into our hands for repair. I have had the use of the Thompson-Yates Laboratory, University of Liverpool, for the examinations in surgical pathology which were made of all the specimens from the large base orthopedic hospital controlled by Col. Sir Robert Jones. Prof. Ernest Glynn, Captain, R. A. M. C. T., has been very kind in placing at my disposal every facility for the prosecution of my studies.

It will be three months before my final report will be in Col. Sir Robert Jones' hands; but I should like to make a few statements for the use of others working along these lines. They may also be of assistance to those interested in surgical pathology and neurology.

The finer histologic study of nerves calls for unusually careful and difficult technic, making the examination of tissues en masse a laborious procedure. I found this to be the case until the special method to be described was determined on after the use of more than twenty-five stains. Nerves were hardened in various ways. They were studied fresh, mounted in glycerin. Bielschowsky's axis cylinder stain, which takes a great deal of time and trouble and then shows only the axis cylinder, had to be depended on as my control.

With my new stain—carbolfuchsin-osmic acid-safranin—all trouble has disappeared. In twenty minutes the specimens may be so prepared that from the point of view of surgical pathology all ordinary questions within the range of the microscope can be satisfactorily answered.

The greatest difficulty in examining material from adherent, bulbous, torn nerves and surrounding tissues is to determine with surety whether or not nerves were present, and if so, in what stage of growth. It is also necessary to study the specimen with regard to progressive tissue changes and the vascular condition. We no longer have to use separate stains to study nerves, connective tissue and circulatory changes.

The nerves stain most prominently, striking the eye at once by their purple (some might call it blue-black) color with a central pink line indicating the axis cylinder. As a rule one is struck more sharply by the purple notched or capped appearance of the more fully grown nerves or the fine purple lines of the early narrow forming fibers. As these fibers increase in age, another striking appearance that meets the eye against a faint pink or unstained connective tissue field is a double purple line, more or less irregular, surrounding a pink, varicose, enlarging axis cylinder. In the bulbous ends, at the point of injury, and in the distal end where there is usually a great proliferation of neurilemma cells, the nuclei are prominently stained pink. In much of our material the infiltration with red blood cells and overgrowth by small blood vessels stands out in distinct relief by the brown color of the corpuscles. These are stained red if not sufficiently decolorized. The muscle appears red, and fat is unstained. The stain lends itself well to photomicrography, a green screen being interposed.

The method is quite simple: The specimen is hardened in 4 per cent. dilution of liquor formaldehydi for six days, carried through alcohols, and embedded in celloidin. Sections may be cut from 10 to 20 microns thick, preferably 10 microns. They are stained in carbolfuchsin fifteen minutes, washed rapidly, placed in 1 per cent. osmic acid five minutes, washed, placed in a 50 per cent. aqueous solution of safranin one minute, 1 per cent. acid alcohol one minute, 95 per cent. alcohol two minutes, absolute alcohol and oil of cloves, alternately until the sections appear deep pink and translucent. They are then placed in xylene two minutes, and mounted in Canada balsam.

Although paraffin sections sometimes stain fairly well, it is not safe, as the xylene used to remove the paraffin before staining interferes with this process. The formaldehyd hardening is essential for the success of the stain.

Alder Hey Military Orthopaedic Hospital.

CHEST ASPIRATIONS BY MEANS OF A SIMPLE SIPHONAGE DEVICE

JOSEPH FELSEN, M.D., NEW YORK

A is a bottle one-half or two thirds full of water and containing two glass tubes, one reaching beneath the surface of the water, the other short, inserted in a two-holed rubber stopper. To the short tube is attached rubber tubing (with a glass insert) connecting with the aspiration needle through specimen bottle *C*. To the long glass tube is attached a long piece of rubber tubing.

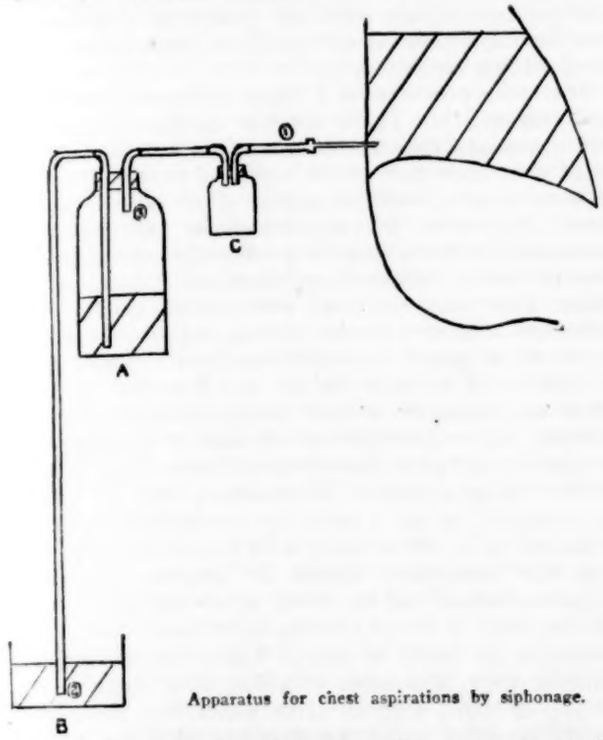
B is a glass vessel into which extends the long rubber tubing from vessel *A*.

C is a small specimen bottle interposed between the chest and *A* by means of glass connecting tubes.

The tube is clamped at 1. Then some fluid from bottle *A* is aspirated by mouth at 2, so that siphonage can be started

into vessel *B*, which is situated at a lower level (for example, bottle *A* on a table, and vessel *B* on the floor).

As some of the fluid is exhausted from *A* by siphonage, a negative pressure results, sufficient to aspirate fluid through



Apparatus for chest aspirations by siphonage.

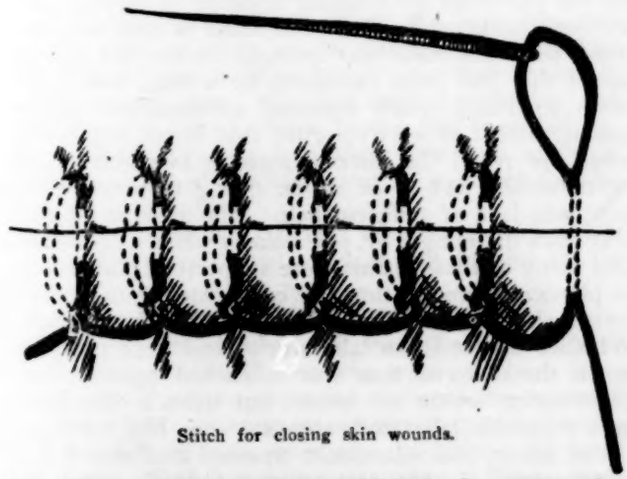
the needle into bottle *C*. Then the needle is inserted and the clamp removed from 1 and the aspiration is begun. Bottle *C*, and then *A* begin to fill with chest fluid, but simultaneously *A* is being emptied into *B* by siphonage. This will keep up until the fluid reached by the needle has been exhausted.

Mount Sinai Hospital.

STITCH FOR CLOSING SKIN WOUNDS

FOWLER ROBERTS, B.S., M.D., INDIANAPOLIS
Resident Surgeon, Indianapolis City Hospital

So far as I have been able to learn, no description of a stitch I am using at the Indianapolis City Hospital for clos-



Stitch for closing skin wounds.

ing skin wounds has yet been published. It consists of a series of mattress-on-edge stitches, as in the accompanying illustration, made continuous by looping the suture as in a buttonhole stitch instead of tying as in the interrupted mattress-on-edge.

Military Medicine and Surgery

THE EXAMINATION OF REGISTRANTS

M. L. HARRIS, M.D.
Medical Member, District Appeal Board
CHICAGO

When the first draft started, it was entirely a new experience to the people of this country. The rules and regulations were so drawn as to place the carrying out of the provisions of the act in the hands of the people; in fact, the act itself forbade any one connected with the military establishment to have anything to do with the execution of the draft. The personnel of the boards, local and district, was made up of civilians, both lay and professional, none of whom had had any experience in the selection of men for the Army. Practically all of the members of the boards labored under the disadvantage of having no opportunity to acquaint themselves with the work to be done until they were appointed to the positions and ordered to proceed at once with the draft. It is no wonder, then, that things did not go at all times as smoothly as they should have gone; it is no wonder that there were differences of opinion and even a lack of harmony between the various boards, which a better understanding of the work to be done would have avoided. However, notwithstanding these facts, and in spite of the further facts that the law and the rules and regulations in many instances were vague and uncertain in their terms, the results in the main were quite satisfactory. Naturally we, as physicians, are most interested in the medical aspect, or the physical fitness or unfitness of those whom we were called on to examine. It should be understood that the question which the physician is to determine when a person presents himself for examination is not what ailment, if any, he may have, but whether he is fit or unfit to do military service. These are not necessarily synonymous, for there are certain ailments which a person may have and still be fit for military service; and, on the other hand, he may be unfit for service without there being any special physical disability. It is not always an easy matter to decide whether or not a certain condition really unfits one for service, nor are the rules and regulations definite and clear on the subject. Much is necessarily left to the judgment of the examining physician.

When physicians are taken from civil practice and asked to decide military questions, with which they have had no experience and for which they have had no time to prepare themselves, it is not surprising that a certain number of mistakes in judgment are made; the average physician is not an expert in all branches of medicine, and therefore he may fail to recognize a condition which, to another more experienced in that particular line, would be apparent. Again, it is not always an easy matter to detect malingering; and unless one is familiar with all the tricks and frauds to which some resort in order to escape military service, one will occasionally be deceived. There are still other points which should be taken into consideration; for instance, during the first draft many examinations had to be made very hurriedly on account of pressure of time; and perhaps overzealousness on the part of some examiners may have led to the acceptance of some risks that ought to have been rejected.

With all of these obstacles to contend against, it is not strange that quite a number of those passed by the first examiners had to be thrown out on appeal; or, when no appeal was taken, were returned from camp after having been sent down.

Being the only medical member of one of the district appeal boards of this city, it became my duty to reexamine many hundreds of registrants who appealed on physical grounds from the decisions of local boards. I was ably and unselfishly assisted in this work by an advisory medical board, consisting of Drs. George F. Fiske, Hugh T. Patrick, Coleman G. Buford, George F. Suker, John A. Graham, L. J. Pollock and George J. Aste. The cases examined were all appealed on physical grounds from the decisions of local boards. In the great majority of the cases the findings of the local board were before us. The method of procedure was as follows: With the registrant before us he was requested to state the grounds of his appeal, which statement was taken down in shorthand. He was then examined as to all the points made in his statement. As a matter of economy of time and labor, it was found to be very desirable to limit the examination to the complaints made by the registrant. As will be shown later, no injustice was done the individual or the government by thus limiting the examination, but the saving of time and labor was very great. Of course, when conditions were discovered during the examination which were not known, or at least not complained of, by the registrant, they were noted, but no uniform attempt was made to investigate conditions not brought out by the statements of the registrants.

THE QUESTION OF CONDITIONS THAT DISQUALIFY

When the registrant alleged more than one ailment, which was very common, he was examined first for the most important one from a disqualifying sense. For instance, one might complain of bad eyes, trouble with his stomach, and rheumatism. The eyes would be examined first, and if the vision was found to be so defective as positively to disqualify the man, no time was spent in investigating his other complaints. It should be understood that the purpose of the examination is to determine the fitness or unfitness of the registrant for military service, not to make a complete clinical diagnosis such as one would do in practice. Hence, just as soon as a condition is found which under the rules and regulations positively disqualifies the man for military service, the examination need not be further extended. This, of course, applies to examinations on appeal, as it is necessary in all cases for the local board to make a complete examination and fill out a blank form as required by the rules and regulations.

It is not always easy to decide in a given case whether or not the condition found is sufficient to disqualify. The rules laid down for the guidance of physicians are quite incomplete and often ambiguous, so that much is left to their unaided judgment; and as one may have had, perhaps, little or no previous experience in selecting men for the army, errors in judgment are not uncommon. A condition may disqualify in one individual and not in another. This is well shown in the matter of flatfoot. For instance, a great majority of the Jews that appealed to this board gave flatfoot as one of the grounds of physical unfitness, and on examination flatfoot in varying degree was found almost universally in these cases; yet no disability was shown to exist, for the history showed that the flatfoot had always been present and had never caused the individual to lose any time from his usual occupation; in fact, flatfoot in these Jews was so very common that the condition was the rule rather than the exception. Flatfoot is really a racial characteristic, and in these cases not a disqualifying condition.

The mere presence of a heart murmur does not in itself disqualify. There were a number of cases in which a slight murmur or abnormal sound could be heard over some part of the region of the heart. Some of these sounds would disappear when the person lay down; they were not aggravated by exercise; they occurred in persons who were otherwise well, and who gave no history of previous infectious disease, and in whom there was no other evidence of cardiac disturbance. These persons should not be exempted. However, no person should be accepted in whom there is evidence of valvular leakage or of cardiac enlargement, etc., whether or not compensation is present.

Many registrants claimed syphilis as a cause for exemption, and some brought certificates from laboratories showing a positive Wassermann reaction. Syphilis, however, is not a cause for exemption, unless it is present in an active state with positive lesions, and even then acceptance should be deferred only until the active lesions can be cured, which we know today requires only a comparatively short time. Likewise, gonorrhea in itself is not a cause for exemption. Unfortunately, a number of young men came before the appeal board with an acute gonorrhea, contracted for the occasion under the mistaken idea that gonorrhea was a cause for exemption. In this connection, I may be pardoned for digressing a moment to state that the risk of contracting venereal disease is much less in the Army than it is in civil life. Statistics show that the incidence of venereal infection is less in the Army than it is in the same class of young men in civil life. This is due to the fact that the protection of the soldier against venereal infection is made a matter of business, while in civil life the protection of the young man is made a matter of hysterical sentiment.

MALINGERING

That many registrants try to "put over" something on the physician by feigning ailments is certain, and that one occasionally succeeded must be admitted, for more than one case was brought before the appeal board that had been exempted by a local board for some condition which repeated examinations subsequently failed to verify. And this is not surprising when we recall the hurried manner in which many examinations had to be made, owing to pressure of time, and lack of sufficient help. The great wonder is that more did not get by, particularly when we consider that many of these claims were supported by affidavits of physicians, and at times by certificates from laboratories, showing findings which could not be verified. Whether or not these laboratories had been imposed on in the material that was submitted to them for examination we do not know; but when a urinalysis by a reputable laboratory shows a very high percentage of sugar, and subsequent repeated analyses of the urine taken directly from the individual failed to reveal a trace of sugar, we can only conclude that the laboratory was imposed on.

The old rules and regulations stated that the appeal board would review evidence submitted in the form of

affidavits, and some registrants seemed to assume that that was the only kind of evidence that they would be called on to present. Some registrants protested vigorously when at the examination they were called on to present ocular demonstration of a disablement which they alleged they had and which was certified to by an affidavit of a physician, claiming that the physician's affidavit was sufficient; and only when presented with the alternative of submitting to the examination or of going with an officer did they submit, only to disclose that the condition alleged did not exist. Such experiences as these made it necessary practically to disregard physicians' affidavits, except to the extent that they might indicate a line of investigation. It should go without saying that in matters of this kind nothing but positive evidence or ocular demonstration should be accepted; urine, for instance, should never be examined unless passed in one's presence, and even then one must watch carefully lest deception be practiced, as it is very easy to get sugar in the urine by placing powdered glucose beneath the prepuce a short time before coming up for examination. The passing of the urine washes the glucose into the vessel, where it dissolves at once and is readily found on application of the usual tests.

Diabetes was claimed in a number of cases and supported by physicians' affidavits stating that sugar had been found in the urine; yet the most careful examination of the urine, passed in our presence under proper precautions, failed to reveal any trace of sugar. We had one interesting case of a man who claimed that he had a tumor in the abdomen. When he was stripped, a globular mass was readily visible extending nearly up to the umbilicus. Palpation confirmed the presence of the mass. When asked to urinate he said he could not, as he had just emptied the bladder before coming in for examination. However, I insisted on passing a catheter, and withdrew a very large quantity of urine, with a simultaneous disappearance of the tumor. How many physicians he had fooled by retaining his urine in that way I do not know; but the passing of a catheter ended his attempts in that direction.

Even self mutilation was tried in an endeavor to escape the draft. One young man produced a large slough 3 by 4 inches in diameter on the back of the right calf, probably by burning. A large black eschar involving the whole thickness of the skin was still present when he came up for examination. He had an affidavit from a physician stating that he had a postpneumonic ulcer (whatever that is) on his leg, and that he was subject to them, having had them before; but unfortunately for him there were no scars of previous ulcers of the kind, and no evidence that he had had pneumonia.

Malingering is an extremely interesting subject, but time will not permit me to go into it farther at this time.

REJECTIONS IN CAMP

Through the courtesy of local boards, I have received reports of 347 men who were sent back from camp. In 97 of the cases the cause of the rejection was not given; whether or not due to physical unfitness remains an open question. In 250 of the cases the cause of the rejection is given. There were rejected on account of the eyes, 67; hernia, 25; heart, 25; bad teeth, 24; ears, 15, 11 with discharge, 1 not specified, 3 perforation of the drum; flatfoot, 11 (one with hernia and one with obesity); shortened leg from old fractures, 7; tuberculosis of the lungs, 6; syphilis, 6; mentally defective, 5; underweight, 4; overweight, 2; gonorrhea with arthritis, 3; varicose veins, 3; rheumatism, 3; hammer toes, 3; chronic asthma, 3; stiff elbow, 2; epilepsy, 2; infected tonsils, 2; toxic goiter, 2; deformity of the foot, 2, and 1 each of scar in the groin; scars from burns; piles, hemorrhoids and orchitis; tuberculous glands; flat chest; brain fever; neurasthenia; stammering; fistula in ano; depressed fracture of skull; broken toe; callosities of soles; necrosis of tibia; atrophy of leg muscles; deformity of leg; deformity of hand and of forefinger; undescended testicle, and arthritis deformans. There were 2 ambiguous cases marked simply "arm," and 2 marked "knee."

As will be seen, the greatest number of errors was made in the eye cases. It will be remembered, however, that very few of the physicians on the local boards were oculists, and therefore had had little experience in examination of the eye. Furthermore, it is not always an easy matter to estimate satisfactorily the degree of vision, on account of the great tendency displayed by some purposely to exaggerate their trouble to escape service. In our appeal work it was found necessary to recall some of these persons two or three times before a satisfactory conclusion could be reached. It is quite possible, too, that some of the persons returned on account of defective vision may have deceived the Army surgeons.

APPEAL CASES

I shall now present a brief analysis of 740 appeal cases, which were based on physical grounds, and in which I made the examination. The list does not by any means include all the appeal cases, but all that I have had time to go over. They are taken in the order of examination, and the number is sufficiently large to be representative of the whole. Of this number, 420 men were accepted for service; 277 were rejected, and 43 were disposed of in a variety of ways. In other words, the decision of the local board was affirmed in 420 and reversed in 277, or about 40 per cent. of the cases. Of the 43 men remaining, some were given temporary exemption on account of recent injury or illness, some had dependency claims which overruled the physical claim, some were doctors and dentists who were taken into the Reserve Corps, and some were aliens who could not be accepted under any circumstances.

Cases in Which the Local Board Was Reversed.—Let us consider first the 277 cases, nearly 40 per cent., in which the local board was reversed. Of this number 58 men, or 20 per cent., had to be rejected on account of defective vision. The regulations under which we were operating at the time provided that uncorrected vision must be as good as 20/40 in one eye and 20/100 in the other. As the vision of none of these men came up to standard, all had to be let out. Not all of them had simple errors of refraction; several had corneal opacities due to scars, 2 had cataracts, 2 choroiditis, 2 congenital blindness of one eye, and 1 an optic neuritis of one eye causing almost complete blindness. It is no criticism of the work of the local boards that some of these cases were overlooked, as the conditions were such as would be recognized only by an experienced oculist. Twenty-nine cases, or 10 per cent., were reversed on account of valvular heart

disease. There was nothing special about these cases, and most of them should have been recognized.

Twenty-six men, or nearly 10 per cent., had a chronic discharge from the ear. A chronic purulent discharge from the ear is absolute cause for rejection. As this condition is not, as a rule, a difficult one to diagnose, it would seem that these cases ought to have been recognized with a little more care in the examination of the ear. There were eighteen cases of pulmonary tuberculosis, and I am sorry to say that several of these men were, and had been for some time, inmates of the Municipal Tuberculosis Sanitarium, and should never have been accepted for service. If there is any condition in which the doubt should be resolved in favor of the patient rather than the government, it is pulmonary tuberculosis. Epilepsy comes next with 17 cases. Of course, an epileptic would be absolutely impossible in the Army. The question of whether or not a registrant was epileptic was not always an easy one to decide.

Not much reliance could be placed on the usual physician's affidavit, for it was evident that some of them were based solely on the statements of the registrants, without the physician having seen a fit or having any substantiating evidence.

The history, in all of these cases was carefully gone into by the neurologist, Dr. Patrick, and in case of doubt, parents or other members of the family were summoned and quizzed on the subject.

Affidavits of employers or others who had seen the individual in a fit were likewise obtained.

There were 17 cases of hernia, 12 inguinal and 5 postoperative. Some were quite large, and all were evident on inspection. Seventeen were underheight or underweight, or both. As the regulations prescribe 61 inches as the minimum height, and as our instructions were to make no concessions below 61 inches, of course all who fell below that height had to be rejected. In the matter of weight, more discretion is allowed when the individual is otherwise in good physical condition. I am satisfied that some deliberately tried by starvation to reduce their weight below the minimum. They knew exactly the minimum weight for their height, and watched the scales closely to see that they were under the weight allowed. I let some of these men go, then had them brought in and weighed again when they were not expecting it, and it was surprising to see how much they had gained in weight after a few days of good feeding. They were picked up and sent along.

There were several interesting cases brought to light by the neurologist, of which 9 were classified as mentally defective; 6, dementia praecox; 1, general paresis; 1, Little's disease, or cerebral quadriplegia; 1, old poliomyelitis; 1, atrophy of all the muscles of the left leg with great weakness; 1, hysteria and mental instability; 2, psychasthenia; 1, severe migraine; 1, syphilis of the cord; 1, congenital atrophy of the muscles of both hands with deformity. There were 3 cases of large nontoxic goiter, and 2 of quite severe hyperthyroidism; 4 cases of chronic nephritis, and 1 of diabetes; 3 cases of deformity of the arm from old fractures. The remaining cases represent a variety of conditions, such as old injuries to the hands, feet and legs; old osteomyelitis; aneurysm of the subclavian artery (traumatic); chronic bronchitis with emphysema; chronic asthma; nasal obstruction with asthma; varicose veins and ulcer of the leg; tuberculous glands of the neck; prolapse of the rectum; old injury to the spine; ulcer of the stomach; tuberculosis of the peritoneum; active syphilis of the mouth; stricture of the urethra; undescended testicle; severe anemia (cause not discovered); ankylosis of the elbow; ankylosis of the hip; knock-knee; bad flatfoot; loss of nearly all of the right hand; enormous varicocele, etc. There was but one case of varicocele; it was one of the worst cases I have seen; it involved both sides, and hung down fully 8 inches. It is needless to say that the ordinary varicocele is of no importance whatever. There was also only one man exempted on account of flatfoot, and this case was a bad one, amounting practically to a talipes valgus.

It is rather surprising how some of the men could have been accepted by the local board, as the deformity and disability were obvious; for instance, complete ankylosis of the hip from an old dislocation, ankylosis of the elbow, loss of most of the right hand, including the thumb, etc.

In reviewing those cases in which exemption was granted, and in comparing the findings which led to the exemption of the men with the statements made by them when asked the grounds of their appeal, we discover a fact of the greatest importance to those doing this kind of work, namely, that almost without exception the individual was cognizant of his ailment and correctly stated it when he gave the grounds of his appeal. For instance, every man who was disqualified by reason of defective vision knew and stated that his vision was bad. Every one who had gross heart disease stated that he had trouble with his heart. The same was true in tuberculous cases with only a single exception, and also in chronic discharge from the ear, without exception. Even in the mental cases, without a complete diagnosis, the men stated that they were mentally unfit. The importance of this cannot be overestimated by those who are called on to make physical examinations in appeal cases.

When I was called to Washington to assist the Provost Marshal's department in the formation of advisory medical boards, I had considerable difficulty in convincing the department that it would be unnecessary for these boards to make complete reexaminations in all cases that came up to them. It was the intention of the department at first to have the advisory medical boards make complete examinations in all cases and fill out a complete blank, as is done by the local boards, thus not only duplicating unnecessarily a great deal of the work already done, but also entailing on the advisory boards an immense amount of unnecessary labor, as well as the loss of much time and energy. After I had detailed the experiences we had here in connection with the last draft, it was finally decided to change the appeal blanks so that the registrant when appealing from the decision of the local board on physical grounds must now state the grounds of his appeal. This will enable the advisory board to proceed at once to examine for the conditions claimed, and if these are verified and found to be disqualifying, it will be unnecessary to proceed farther with the examination. In this way an immense amount of time and labor will be saved. Because those who had real ailments stated them, it is not to be inferred that the statements made in the appeal blanks are to be accepted as true. No statement is to be accepted as true unless and until it is verified. The fact that 60 per cent. of those who appealed on physical grounds were unable to substan-

tiate their claims is sufficient proof of the necessity of verification.

Cases in Which the Local Board Was Sustained.—We now come to an analysis of the 420 cases of this group in which the decision of the local board was affirmed, and the man, therefore, sent to camp. What became of these men, and how many of them were sent back on account of their physical condition? This is like getting the end-results of one's operations. I have been able to get returns of these men from the camp, and find that out of 420, twelve were sent home as physically unfit. Of this number, one was discharged on account of a discharge from the ear; my records show that he had a chronic discharge from the ear, and he was exempted on that account by the appeal board. How he got into camp I do not know, but certainly not from any fault of ours.

One was discharged on account of defective vision; my records show that his vision as determined by a very competent oculist was: Right, 20/40; Left, 20/40. As the regulations allowed 20/40 and 20/100 then, and allow 20/100 and 20/100 now, it is evident that this man's vision was well within the requirements, and if anything was "put over," it was in camp and not here.

One was sent back because he wet the bed at night; whether or not he did it on purpose, I do not know.

One was discharged because of "inaptitude," whatever that means—certainly not a very definite reason, but perhaps a very good one after trying the fellow out, though one not likely to be discovered on physical examination.

One was sent back without any cause being given. My records show that he was Jewish and had a mild degree of flatfoot, such as is usual in Jews of his class, and also slight varicose veins; whether or not these conditions were the cause of his discharge, I do not know.

One was discharged on account of hemorrhoids; he had some small, slightly protruding hemorrhoids, which I was sure were not bad enough to interfere with training, and a few days lay-up in the hospital at most would have restored him to health.

One was discharged on account of underweight; he weighed 110½ at the time of the examination, the minimum for his height being 112. His chest measure was 1½ inches greater than was required for his height, and he was physically sound. He tried every way possible to get exempted, including influence and pull, and appeared time and again to have his case reopened. I was always convinced that he deliberately reduced his weight, as his general condition was very good.

One was discharged because of gonorrheal arthritis; he had gonorrhea at the time of his examination, and as many of these men had to wait several weeks after they were accepted before being sent to camp, it is very probable that he developed arthritis sufficiently to disable him by the time he reached camp.

One was discharged on account of his right leg being a little short; this was due to an injury when he was a child. There was no disturbance of function, and he was strong and active, doing hard work. It was evidently thought that he would not be able to stand the strain.

One was sent back on account of secondary syphilis, and finally, two were discharged on account of hernia. No hernia was discovered in either of these men by the local board or by our board. Their statement on the first examination slip denied hernia, and neither of them claimed hernia in their grounds of appeal; one claimed trouble with the wrist from an old injury which amounted to nothing, and the other claimed rheumatism. It would seem, therefore, that these hernias must have developed or, at least, made their appearance, after they began training in the camp.

From this rejected list, then, we may certainly eliminate the man with the discharge from the ear, whom we had already exempted; the man with the 20/40 vision, who was well within the requirements; the man who wet the bed; the man who developed gonorrheal arthritis after he was examined; the man who showed up in camp with secondary syphilis; the man who showed an inaptitude for the work, and the one for whose discharge no cause was given. This leaves only five, the man with hemorrhoids, the one with a shortened leg, the one 1½ pounds underweight, and the two who developed hernia in camp. I know no way of telling whether or when a man put under the strain of military training will develop a hernia; but we do know that practically all hernias developing during the draft age are due to congenital defects, and that a bulging may appear in a preformed sac at an opportune time and almost unannounced. We might have exempted the man with the gonorrhea, had we known he was going to develop arthritis. We perhaps should have exempted the man with the slightly shortened right leg; but the regulations say that in every case of doubt the government should be given the benefit of the doubt and the man sent to camp. I still think the man who was 1½ pounds underweight should not have been returned on that account; and should he come up again in the next draft with nothing more the matter with him, I should be much disposed to return him to camp.

In view of the fact that in all cases of doubt the instruction is to send the man to camp, where he can be tried out, the foregoing appears to be a very good record for the appeal board.

CONCLUSIONS

From the experience of this appeal board, it is perfectly obvious that advisory medical boards should have certain specialties represented on them. Based on the frequency with which the advice of the specialists was desired, I would mention, first, the eye and ear man, and next, the neurologist. When I was in Washington working on the matter of the advisory medical boards, the personnel of what was termed "a normal advisory board" was thus made up: (1) a surgeon; (2) an internist; (3) an oculist and aurist; (4) a neurologist, and (5) a laboratory man, the latter term being used to include the roentgenologist.

In large cities where the specialties are more closely drawn, the number may be increased. For instance, there may be an oculist and an aurist, a heart and lung specialist, etc. While the addition of these extra men is permissible, experience shows that the normal board of five as outlined covers the ground thoroughly, and a small board of five is much more effective than a large and unwieldy board. Of course, there is no objection to duplicating the man when the work is heavy, thus having two or more oculists, internists, etc., so that one man need not be overworked, provided the group of five be retained as constituting a normal board. In sparsely settled communities, where the specialties are not represented, a board naturally

must be made up of the best men available. There seems to be a tendency in some places to make these advisory boards too large, thus detracting from the real efficiency of the work.

As the great majority of the men composing these boards are inexperienced in this particular kind of work, and as many new questions will come to them for solution, it would be very advantageous if there were some one of experience in the Provost-Marshal General's office to whom they could turn for advice. Strange as it may seem there is not a physician attached to that office.

It is hoped that with the help of the advisory medical boards, there will be fewer physically unfit men sent to the camps, to be returned. This is not only a great financial loss to the government, but also a material loss to the individual, who breaks up his family and business relations only to find that he is not wanted in the Army. It is expected that there will be some returns, for there will be borderline cases, cases in which there is doubt, and the instructions are that the government must have the benefit of the doubt, as there is still another chance for the man to be weeded out under circumstances more favorable for determining his fitness or unfitness for service. It is desirable, however, to have the doubtful cases as few as possible.

25 East Washington Street.

Therapeutics

SIMPLE CATARRHAL JAUNDICE

This condition is due to a blocking, from more or less inflammation and swelling, of the common bile duct. While this duct alone may be involved, it is generally secondary to inflammation of the duodenum. This irritation and inflammation of the duodenum may itself be secondary to a simple gastritis, and the whole condition may be a sequence of serious maldigestion or infection and irritation from some deteriorated or toxin-bearing food. The ingestion of too much alcohol or of too much simple irritant, as mustard or rich sauces, or of some irritant drug or an irritant poison may cause secondarily the condition of simple catarrhal jaundice. In a person who has had this condition once, or is predisposed to abdominal congestions, chilling of the abdomen, either from a sudden change in temperature, or from exposure of an insufficiently clothed abdomen to cold air, may cause duodenal congestion and catarrhal jaundice.

This kind of jaundice is most likely to occur in the season of the year in which there are sudden changes to lower temperature, especially in the fall and in the early spring following warm periods. Whatever may be the exciting cause, cold frequently plays a contributing part in the development of the disease.

A true epidemic form of this disease has been termed Weil's disease, and has been accredited to a spirochete known as *Spirochaeta icterohemorrhagiae*. This is ushered in with a high fever, lasting one or two weeks, with a gradual decline in the second week, and is attended with considerable prostration. Albumin has been found in the urine, and the spleen has been enlarged. Whether the simple catarrhal jaundice so frequently seen is a sporadic form of such an infection has not been determined. Until they have been proved to be related, it would seem well not to consider simple catarrhal jaundice as the disease described by Weil.

Simple catarrhal jaundice generally develops insidiously; rarely shows any increase of temperature, and if there is a fever it is very low, and often the temperature is subnormal; there is considerable prostration; slow pulse; entire loss of appetite; some nausea; often vomiting; and there is likely to be constipation, although there may be diarrhea. The head feels dull, or there is real headache. The tongue is heavily coated, either brown or yellow. The breath is very bad, and there is a bad taste in the mouth. There is soon bile in the urine, and there may be traces of albumin. Jaundice may be present when the patient is first seen, if the digestive symptoms are sufficient to cause the patient to seek a physician early. Soon the stools are clay colored, and the skin is dry and irritated sufficiently to cause itching. The perspiration generally stains the clothing. There is much mental depression, and inability to do mental work, but generally not much abdominal pain. The jaundice usually lasts two, three or even four weeks; if it lasts much longer than four weeks, some other cause for the jaundice than a simple inflammation must be sought.

The more at rest the patient is, the quicker will the jaundice generally subside. In the beginning a dose of calomel, in amount considered sufficient, should be given, followed by a saline. A gram of bismuth subcarbonate and a gram of sodium bicarbonate may be given every three hours during the day for two or three days, and then three times a day, before meals, for a few more days. The bowels must be moved daily by some simple saline or laxative water. If there is much epigastric tenderness and soreness, or if there is nausea, milk of magnesia in teaspoonful doses every three or four hours, in hot water, is advisable. The patient should be given plenty of water to drink. Hot water is also advisable.

For the first twenty-four hours, nothing but water may be given, unless food is especially desired. On the following day the nourishment should be bouillon or hot broths, tea, toast, thin oatmeal gruel, or some other simple thin cereal. Malted milk may be given, and in another day or two a poached egg or two, if they are well tolerated. All fats and milk, except possibly skimmed milk, should be avoided in catarrhal jaundice. It is a mistake to consider milk a good food in this condition. No liquid should be given cold, and no cold food should be given; anything cold taken into the stomach in this condition is probably disadvantageous. As soon as the sodium bicarbonate in combination with the bismuth subcarbonate is given less frequently, an alkali should be given, as potassium citrate, 2 gm., in wintergreen water, 10 c.c., three times a day, after the main nourishments.

As stated above, the more at rest the patient is (in other words, the more he lies down) the better. There is less abdominal congestion, and the circulation in the congested region is improved. As an aid to resorption of the exudate in these swollen parts, abdominal warmth is advisable, and an electric heating pad or hot water bottle kept on the abdomen for hours at a time is good treatment. When the patient is up and about, the abdomen should be kept extra warm by flannel or absorbent cotton.

To relieve internal congestion and to increase the secretion of the skin and stop itching, it is advisable to have a daily hot bath. It is of advantage especially in removing the irritating crystals that occur on certain parts of the body from the perspiration in this condition.

As the patient improves, the diet can be enlarged with oranges, baked potatoes, rice and more meat, still withholding the fats, except that foods with cooked milk, as custards, may be well digested.

If the jaundice lasts more than ten days or two weeks, ammonium chlorid in half-gram doses, three times a day, after meals, may be given. Ammonium chlorid apparently increases the secretion of the mucous membranes. Probably it increases the secretion of the bile ducts as it does that of the bronchial tubes. It may be a valuable treatment in this condition, when the improvement is slow. The following prescription may be utilized:

	gm. or c.c.
℞ Ammonium chlorid.....	10
Syrup of citric acid.....	25
Water .....up to	100

Mix and label: A teaspoonful, in water, three times a day, after meals.

VACCINATION AGAINST SMALLPOX

THE KIND OF VACCINE TO USE AND HOW TO USE IT

The United States Public Health Service in Public Health Reports for November, 1917, advises the following procedure in order to secure the best results from vaccination and to prevent possible complications.

I. THE VACCINE

The freshest possible vaccine should be obtained. All vaccine packages, pending use, should be kept in a metal box in actual contact with ice.

II. THE VACCINATION

Vaccination should never be performed by cross scratching or scarification, but by one of the methods described below. If a prompt "take" is very necessary, as in case of direct exposure to smallpox or if the first attempt has been unsuccessful, three or four applications of the virus should be made, but the insertions should be at least an inch apart. Whichever method is used, a control area may be first treated similarly, but without the virus, in order to estimate the amount of pressure necessary for insertion and in order to demonstrate a possible early immune reaction in previously vaccinated individuals.

Preparation.—The skin of the upper arm, in the region of the depression formed by the insertion of the deltoid muscle, should be thoroughly cleansed with soap and water if not seen to be clean, and in any case with alcohol or ether on sterile gauze.

After evaporation of the alcohol or ether, a drop of the virus should be placed on the cleansed skin. To expel the virus from a capillary tube, the tube should be pushed through the small rubber bulb which accompanies it, wiped with alcohol, and one end broken off with sterile gauze; the other end may be broken inside the rubber bulb. The hole in the latter should be closed with the finger as the bulb is compressed to expel the virus.

The under surface of the arm is grasped with the vaccinator's left hand so as to stretch the skin where the virus has been placed. The skin is kept thus stretched throughout the process.

Methods.—(*a*) The Method of Incision, or Linear Abrasion: By means of a sterilized needle or other suitable instrument, held in the right hand, a scratch, not deep enough to draw blood, is made through the drop of virus, one-quarter inch long and parallel with the humerus. The virus is then gently rubbed in with the side of the needle or other smooth, sterile instrument. Some blood-tinged serum may ooze through the abrasion as the virus is rubbed in, but this should not be sufficient to wash the virus out of the wound.

(*b*) The Drill Method: A sterile drill, such as is used for the von Pirquet cutaneous tuberculin test, shaped like a very small screw driver with a moderately sharp end not more than 2 mm. wide, is held between the thumb and middle finger, and with a twisting motion and moderately firm pressure, a small circular abrasion, the diameter of the drill, is made through the drop of virus; this should draw no blood.

(*c*) The Multiple Puncture Method: A sterile needle is held nearly parallel with the skin, and the point pressed through the drop of virus so as to make about six oblique pricks or shallow punctures, through the epidermis to the cutis, but not deep enough to draw blood. The punctures should be confined to an area not more than one-eighth inch in diameter.

With Methods *a* and *b* it is advisable to expose the arm after vaccination to the open air, but not to direct sunlight, for fifteen minutes before the clothing is allowed to touch it. With Method *c* the virus may be wiped off immediately.

III. THE VACCINATION WOUND

1. The original vaccination wound should be made as small as possible, and all injury to the vaccinated arm should be guarded against. Any covering which is tight, or more than temporary, tends to macerate the tissues during the "take." This is to be avoided. No shield or other dressing should be applied at the time of vaccination. Customary bathing and daily washing of the skin may be continued, so long as the crust does not break. The application of moisture to the vaccinated area should not be enough to soften the crust.

If an early reaction of immunity is to be watched for, the patient should report on the first, second, fifth and seventh days after vaccination. Otherwise, the patient should report on the ninth day, or sooner if the vesicle, pustule or crust breaks. Every effort should be made to prevent such rupture. However, should the vesicle, pustule or crust break, and the wound thus become open, daily moist dressings with some active antiseptic, such as mercuric chlorid or dilute iodin (one part tincture of iodin in nine parts of water) should be applied. Under no circumstances should any dressing be allowed to remain on a vaccination wound longer than twenty-four hours, and no dressing should be applied so long as the natural protection is intact.

On account of possible fouling by perspiration and to lessen the chance of exposure to street dust, primary vaccination should be performed preferably in cool weather. In order to encourage proper surgical treatment, no charge should be made for the after-care of a vaccination, or for revaccination in case the first attempt should prove unsuccessful.

Although apparently trivial, vaccination is an operation which demands skill in performance and care in after-treatment in order to avoid the rare, but serious, complications. For the prevention of these complications vaccination (*a*) should be performed with strictly aseptic technic, (*b*) should cover the smallest possible area for each insertion, and (*c*) should be treated without any covering which permits maceration.

A child should be vaccinated by the time it has reached the age of 6 months, and the operation should be repeated at about 6 years of age and whenever an epidemic of smallpox is present.

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THE TAX ON OLEOMARGARINS

The world war has served in the most unexpected ways to awaken this nation to the true meaning of food problems and to the magnitude of many heretofore undervalued factors in the rationing of the American people. The growing scarcity of milk has dawned on us along with a profounder realization of the indispensability of a certain quota of milk in the daily diet of children. In addition to what may be termed a physiologic requirement in the case of the adolescent, culinary customs have created a further demand for milk, which plays a part in modern cookery in almost innumerable ways. Without milk in the kitchen, the American housewife would be confronted with unanticipated difficulties in the technic of food preparation. For this reason the dairyman is urged to speed up the production of milk; the housewife, on the other hand, is warned to be conservative in the use of a food commodity on which our children should have first claim.

The use of butter, which has unquestionably grown in popularity in this country in recent years until the per capita consumption approximates nearly an ounce a day, is closely bound up with the problems of milk supply. It requires many quarts of milk to produce a pound of butter, and so long as skim milk, which is the chief by-product in the manufacture of butter, remains so greatly undervalued in human dietary practice, it may truly be said that butter making diverts enormous quantities of milk into channels in which all of its nutrients except the fats are lost for human consumption. The need of fats in the dietary is beyond dispute. To deprive any nation of a reasonable quota of edible fats is to institute a national calamity of the direst sort. No one will gainsay that butter has won a deserved place of excellence in the dietary of man. The inexorable law of supply and demand has increased the price of butter to a point at which its cost is almost prohibitive for the poorer classes; and incidentally the high price serves to divert more milk than ever before into the churning room. Guided by the experience of other countries, as well as by the common sense of which science is merely an organized expression, American housewives have long since learned that there is no monopoly of usefulness pertaining to any one of a considerable number of fats of both vegetable and animal origin. Technology furnished successful means of varying the texture of naturally occurring fats so that desired or supposedly advantageous degrees of hardness or softness could be secured. The history of these endeavors — the story of the technical production of butter substitutes and so-called artificial butters, oleomargarins, hydrogenated fats, etc.—need not be reviewed here. It includes chapters of bitter controversies that have lost their early significance through the demonstration, repeatedly verified, that these newer types of fats are alike digestible and wholesome, and that today they reach the markets in excellent sanitary condition. The sale of many edible fat mixtures has, however, been so greatly hampered by legal restrictions that the public has had little opportunity or inducement to become acquainted with the newer food possibilities.

The national and international situation as regards edible fats and butter in particular has forced attention to the hitherto depreciated products until candor compels an honest investigation of the merits and effects of the legislation at present in force. The modern oleomargarin laws date from 1886, when oleo oils, lard and cottonseed oils alone competed to any extent for recognition as butter substitutes. At present this list is augmented by increased production of peanut oil, copra and coconut oils, soy bean oil, maize oil and highly refined cottonseed oil. These lend themselves to a great variety of combinations and transformations to produce edible fats. The government imposes a large tax on dealers and manufacturers of oleomargarin, with large fines for failure to comply with the legal restrictions. Colored oleomargarin pays a tax of 10 cents a pound; the uncolored fat pays one-quarter cent. Butter is colored to imitate the golden yellow shade of the summer variety at all times of the year, without any interference by an almost prohibitory tax on a much desired food.

The New York *Times*, commenting on the obvious unfairness of the present situation, stated editorially not long ago:

> The only imaginable reason why even the white oleomargarin that next to nobody will buy is taxed and can be sold only under an elaborate system of licenses, and why, if it be colored exactly as is all except a very little of the very best butter, and so made largely salable, the licensing system is still further elaborated and the tax many times multiplied—the reason for all that is because the dairymen want it to be so. They have never been able to deny that oleomargarin is as wholesome and nutritious as their own product. . . . Whether made of beef fat or of any of several pure vegetable oils, there is nothing to be said against oleomargarin as a food and much in its favor. Even to the imagination it ought to appeal more effectively than butter, for it is of far cleaner origin, and there is no suspicion, as in the case of butter, that it sometimes carries the germs of disease.

In spite of all the restrictions placed on the sale of oleomargarin, the statistics of its manufacture show an increased demand for the product during the past

year, represented by an output of nearly 235,000,000 pounds. Is it not high time to ask whether indifference to the needs of the general public shall continue to be maintained by a special class? If the legitimate substitutes for butter were allowed to come into the general use for which they are qualified, not only would a reduction of living expenses become possible thereby, but also the price of milk and cream ought to be decreased below the rapidly approaching prohibitive point.

It is doubtless true that the fats of milk carry a desirable amount of growth-promoting vitamin which the oleo oils manifest only in lesser degree, and which the vegetable fats seem to lack entirely. No one asserts that butter and cream should be excluded from the ration. All that can be asked in fairness is a repeal of the odious discriminatory taxes that tend to prevent the other fats from competing with butter on fair terms. If the necessities of war succeed in doing this, they will merely right a wrong that has long offended fair minded students of nutrition.

APPROPRIATIONS FOR CITY HEALTH DEPARTMENTS

Two years ago, Dr. William C. Woodward,[1] health officer of the District of Columbia, said:

> In order to make facts pertaining to health contribute most largely to human happiness, two things are necessary: first, to establish such facts and to correlate them, so that we may understand their full significance and the underlying principles. Second, to weave those facts into the lives of the people.

Public hygiene, so far as it can be contrasted with the hygiene of the individual, is that which is practiced by the government for its citizens. It consists, as one writer has expressed it, chiefly in efforts by the government to maintain a wholesome environment in which to live, including good outdoor air, clean streets, pure water, good sewers, quarantine and legal regulations concerning houses, schools, prisons, hospitals and other public institutions, foods sold in markets, and conditions of employment. It is chiefly useful in preventing acute or infectious maladies, accidents and occupational diseases.

At the present time, if never before, preventive medicine makes its appeal not merely on the ground of human happiness, but quite as well because of the pressing need of conserving human efficiency. The world needs all the human forces that can be mobilized. There is a growing recognition that public hygiene pays — that it can accomplish results of obvious importance. It has become the duty of the government not merely to teach the community, but also to enforce sanitary laws. If men cannot be made healthy by compulsion, they can at least be made to conform to such rules of conduct as to permit their neighbors to be healthy. Public health is not something that grows and brings forth fruits without special attention from any one. We must come to understand that the benefits of hygiene cannot be gathered without cost. We recall an instance in which a railroad was forced by a community to construct a viaduct involving an interest charge of $2,000 a year to prevent one needless death; yet the aldermen of the same community were spending only $150 to prevent fifty deaths.[2]

What efforts are being made to purchase public health? Surgeon Preble[3] of the U. S. Public Health Service has lately summarized the expenditures of 330 cities in the central and eastern United States for public health work. It appears from his statistics that the average per capita expenditure varies fairly directly with the size of the community. Yet the average salary of the health officers of sixteen cities having a population between 100,000 and 300,000 is less than $2,500 a year. The annual average per capita expenditure for the 330 communities cited by Preble is 27.2 cents, varying from 9 to 39 cents. If we accept as generally agreed that the expenditure of about 50 cents per capita is necessary for satisfactory public health activities, the average city in the group just referred to is expending only slightly more than half the amount that is considered reasonable for the control of health hazards. This is manifested by the results achieved. For the average expenditure of 27.2 cents, Preble found an average sanitary rating of only 66.7, out of a possible 100 per cent. The larger cities, with an average expenditure of 39 cents. annually, get an average sanitary rating of 80.8 per cent. Hence he justly adds that under efficient management it might seem reasonable to expect that an expenditure of about 50 cents per capita annually would raise the sanitary rating of the group to a point above 90 and result in a marked reduction of sickness and a saving of lives, a worthy return on the investment. Perhaps broader public education in the science and accomplishments of preventive medicine and hygiene will help to make even smaller communities begin to realize that their health officials are too poorly paid — and consequently their health activities too poorly organized and administered. We propose to revert repeatedly to the contention that the sanitary status of a larger community in which menaces are varied is likely to remain low as long as the appropriations for its health department remain low so that efficiency cannot be purchased. Surely the chief of a public health establishment is as worthy of his hire as a chief of police or a fire department head.

1. Woodward, W. C.: Ways and Means of Bringing Matters of Public Health to Social Usefulness, Proc. Second Pan-American Scient. Cong., Section VIII, 1917, **9**, 526.

2. Rankin, W. S.: The Potential Influence of Vital Statistics on the Conservation of Human Life, Proc. Second Pan-American Scient. Cong., 1917, **9**, Part 1, p. 346.

3. Preble, Paul: Appropriations for City Health Departments, Pub. Health Rep., 1917, **32**, 2072.

HEAT AS AN INDUSTRIAL HEALTH HAZARD

The speeding up of a large number of industries has been one of the most immediate effects of the world war, no less than the establishment of new lines of manufacture or the revival of less familiar ones. As a result, attention has been directed to new or hitherto rarer forms of menace to the worker. Dangers from poisoning have arisen in places where they were scarcely known before.[1] Occupational diseases have forced themselves into public prominence because of the greater numbers of workmen involved in certain factories. The possibility of accidents in industrial plants has become somewhat magnified by the conditions under which we are living.

There are, however, other menaces to human welfare and human efficiency which creep into industrial life in a variety of insidious ways so that their presence is not so readily appreciated. The harm that they do betrays itself not in sudden collapse of the individual, in his permanent withdrawal from the industry or even in his temporary exclusion from the working plant, but rather in a deterioration of his output, a decline in capacity to work, and an increase in the sick list. For these reasons the problems of industrial fatigue are being subjected to careful consideration both abroad and more recently in this country. Helpful studies have already been made among thousands of munition workers in Great Britain, and some of the conclusions have been reviewed in The Journal.[2] Long hours of work, in addition to unhygienic conditions of living, have played a part in the unfavorable results reported from certain groups of workers. Factors of this sort are not the exclusive peculiarity of any single industry: they are common to many industrial plants.

There is an unexpectedly large number of occupations in which unfavorable conditions of heat and humidity bring health hazards that are either compulsory because of the nature of the industry or arise because too little attention is paid to them. Hard work in a hot and sultry atmosphere may for a time become the lot of almost any workman. But more specifically exposure to excessive heat is especially common in stokers and firemen, smelters, puddlers, blast and electric furnace men, steel mill and foundry workers, blacksmiths, glass blowers, kiln and pottery men, bakers, cooks, miners, tunnel workers and maltsters; whereas heat combined with humidity is especially trying to workers in breweries, laundries, kitchens, hothouses, tanneries, canneries and sugar refineries. The mere rehearsal of these groups shows how formidable the less obvious heat hazards may be. Surgeon Watkins[3] of the U. S. Public Health Service, speaking before the American Public Health Association in Washington last October, remarked that unusual conditions of temperature and humidity played only a minor rôle among health hazards in industrial plants until steam was substituted for water power. Since that time, he added, exposure to atmospheric conditions of high temperature and unusual humidity, coincident with the marvelous growth of industry and the invention and introduction of new machinery and various manufacturing processes, has given rise to one of the most common and serious problems of industrial hygiene.

Exposure to dry heat for a short period is sometimes borne without serious effects in temperature as high as 150 F., provided the air is kept in motion; and a temperature of 212 F. may be borne by puddlers and electric furnace men, for a very brief period, without serious injury. The limits of physiologic toleration are not easily learned; and the factors of safety are doubtless frequently tried to their utmost. Radiant heat, particularly as it applies to men engaged in handling molten metal, generally exercises its effect on the parts of the body exposed to it. There may be dermatitis, inflammatory reactions of the conjunctiva, or even more serious eye effects perhaps induced by partial desiccation of the tissues. There are numerous acute symptoms, such as colic and muscular cramps, produced by exposure to heat; but the more chronic effects that result in what may be described as a lowering of the general physical tone of the worker are those likely to be underestimated because their onset is slow and insidious. Kober[4] points out that the "colds" so common among workers exposed to excessive heat are due to "the pernicious habit of the employees in passing from an overheated atmosphere to the outer air during the cold months." As he remarks, any abrupt change of temperature is liable to cause congestion of internal organs with its sequence of catarrhal and neuralgic conditions.

In discussing the mitigation of heat hazard, Watkins has pointed out that lack of forethought is responsible for much discomfort if not actual disease. The temperature is frequently high in working locations because of faulty arrangement of machinery or improper housing of the outfit. Many of us can doubtless recall instances in which the working zones of those employed at boilers or furnaces is unduly restricted, or a clerical force is subjected to the fatiguing annoyance of heat because of poorly planned building arrangements. These are instances of remedi-

1. Trinitrotoluene (T. N. T.) Poisoning Among Munition Workers, editorial, The Journal A. M. A., Dec. 15, 1917, p. 2041. Hamilton, Alice: Industrial Poisoning in Aircraft Manufacture, ibid., p. 2037.

2. The Health of Munition Workers in Relation to Their Working Output, editorial, The Journal A. M. A., Jan. 20, 1917, p. 203; The Danger to Munition Workers from Trinitrotoluene, Oct. 20, 1917, p. 1353; Women in the Munition Factories, Social Medicine, Economics and Miscellany, Feb. 3, 1917, p. 394; Trinitrotoluene Poisoning, Therapeutics, Feb. 10, 1917, p. 459; London Letter, Jan. 15, 1916, p. 205; Feb. 19, 1916, p. 587; March 11, 1916, p. 827; April 22, 1916, p. 1319; Aug. 12, 1916, p. 523; Jan. 27, 1917, p. 298; June 2, 1917, p. 222; Aug. 18, 1917, p. 579; Nov. 24, 1917, p. 1811.

3. Watkins, J. A.: Mitigation of the Heart Hazard in Industries, Pub. Health Rep., 1917, **32**, 2111.

4. Kober, G. M., and Hanson, W. C.: Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., 1916, p. 435.

able conditions too often overlooked by architects and factory builders. The protection of workers when the character of their operations necessitates more direct exposure to high temperatures involves a large variety of devices adapted to the individual cases, but in any event always worthy of careful consideration and provision. Radiant heat can be mitigated in numerous ways — by screens, air blasts, insulating devices, etc.; but when these fail to accomplish all that is desired, attempts should be made to increase the heat loss from the body by movement of the air, by reduction in clothing worn, and by water drinking.

As the rate of heat loss is proportional to the square root of the velocity of the air current, the current of air in all hot working zones should at least be perceptible. Air moving at 1½ feet a second is imperceptible, while a rate of 3½ feet a second causes a perceptible draft. The degree to which clothes obstruct the loss of heat from the body is rarely appreciated. A man clothed and exposed to a temperature of 64.4 F., says Watkins, will lose about 79 calories an hour; under the same conditions, but naked, he will lose 124 calories. In the hot and humid kitchen of a railway dining car, or in a laundry in midsummer, such factors can be taken into account. But when abnormal conditions of temperature are due to radiant heat, workers are actually forced to wear additional clothing to avoid injury to the skin. Under such conditions, in which exposure cannot be prevented, the sole mitigation lies in the reduction of the length of exposure. It is necessary, Watkins concludes, to increase the force in a given location, and to allow men to work in short spells. In this way, he says, the short duration of the exposure, combined with the greater period for recuperation afforded by the long rest intervals, keeps the mechanism of the body at its highest efficiency, and permits it to endure to the best of its capabilities the stress to which it is subjected during working intervals.

Infant Mortality Among Negroes.—The high infant mortality in the Columbus Hill District, New York City, largely populated by negroes, has long been a subject of concern to the health department, and in the summer of 1916 intensive efforts were made to see if this high death rate among infants could be reduced. The department of health now publishes comparative statistics of the death rate in 1915 before special efforts were directed to this district and for 1916, when an active campaign for the betterment of conditions surrounding infancy was being carried on. The statistics show that, in 1915, the death rate from congenital causes was 125.52 per thousand births; in 1916, 43.95. In 1915 the death rate from respiratory causes was 79.5 per thousand births; in 1916, 47.62. From diarrheal diseases, in 1915 it was 71.12; in 1916, 47.62. From infectious diseases, in 1915, it was 37.06; in 1916, 43.95. In 1915 the death rate from all causes was 314; in 1916, 168.5. In 1916 the infant mortality rate for negroes was 193.3; the infant mortality rate for the city as a whole was 93.1, and for the white population, 90.7. For the first nine months of 1917 these figures have been decreased, the rates being 175.6 for negro infants, 91.5 for all infants, and 89.71 for white infants.

Current Comment

ARSPHENAMINE

No, this is not a new chemical; it is simply the name adopted by the Federal Trade Commission for the hydrochlorid of 3-diamino-4-dihydroxy-1-arsenobenzene — in other words, salvarsan.[1] As our readers already have been informed,[2] three firms have been licensed to manufacture and sell arsphenamine; but, while each manufacturer may have his own trade name on the label, the official name must be the prominent one on all packages. Hence, physicians should at once make it a point to learn and use the name "arsphenamine" in place of salvarsan. At first sight, arsphenamine looks formidable. In reality, it is just as easy to familiarize oneself with the word "arsphenamine" as it was to learn to use the terms "salvarsan," "arsenobenzol" or any other of the trade names.

PROTECTIVE MEASURES AGAINST SECONDARY CONTACT INFECTIONS IN INFECTIOUS DISEASES

Last week[3] we directed attention to the newer methods described by Weaver against the transfer from patients to nurses, orderlies, physicians and others, of the germs of infectious diseases that involve especially the upper respiratory tract. These methods, which include isolation, the wearing of a simple protective face mask, and cleanliness of hands, are aimed, not only against infections of the persons mentioned, but also against these persons becoming carriers of the germs of these infectious diseases. In the case of some of the diseases, the danger to life is not always, or even as a rule, due to the developments of the primary infection itself, as now understood, but rather to complicating secondary infections with streptococci, pneumococci and other bacteria. This is true especially of scarlet fever and measles. In scarlet fever it concerns almost exclusively infections with streptococci. In measles, however, secondary infections with the bacilli of the influenza group and also with streptococci and pneumococci are relatively common. In view of the paramount importance of these secondary infections in the attacks of scarlet fever and measles, the principal effect of the pure virus of each of these diseases seems to be to open the door — so to speak — to the secondary invaders. Now that we know that streptococci and other bacteria may grow in virulence in the susceptible animal, it becomes our positive duty to prevent, by isolation and other protective measures, the transfer of the virulent material from patient to patient. We can understand from what we know of the dissemination of throat and mouth bacteria in coughing, by soiling the hands and in other ways, the great danger of such transfer when patients lie side by side in the same room. Perhaps the sad instances of several deaths of children in the same family from

1. THE JOURNAL A. M. A., Dec. 22, 1917, p. 2115.
2. THE JOURNAL A. M. A., Dec. 8, 1917, p. 1989.
3. The Use of the Face Mask and Other Precautions Against Pneumonia and Other Diseases Spread by Nasopharyngeal Secretions, Current Comment, THE JOURNAL A. M. A., Jan. 12, 1918, p. 96.

scarlet fever or from measles, sometimes spoken of as family susceptibility, often result from the passage from child to child of especially virulent streptococci and other secondary invaders. These considerations apply with especial force to hospitals for contagious diseases, miiitary camps and all places where patients with acute infectious diseases are grouped together. This is a point to which too little attention has been paid. The measles patient must be protected against the pneumococci and other secondary invaders in other measles patients nearby; the scarlet fever patient must be protected against the virulent streptococci that infect patients with scarlet fever. To effect this protection it is essential, in addition to the methods already mentioned, to secure a much more complete individual isolation than is now practiced or regarded as necessary. The convalescent patient should not be permitted to mingle indiscriminately with other patients perhaps already infected with serious complications.

ALCOHOL AND STERILITY

Sterility in the male is frequently charged to genital diseases. Although the habitual use of alcohol in excessive amounts has long been held responsible for alterations in the reproductive functions, it is usually to cirrhosis or fatty infiltration of the liver and to sclerotic conditions that attention is popularly directed in illustration of the baneful effects of alcoholism. It is being realized, however, that alcohol alone probably does not suffice to produce cirrhosis of the liver. This drug is only one of a number of contributory factors. It is difficult, if not impossible, to produce cirrhosis experimentally in animals by the ingestion of alcohol. But there is increasing evidence of the harm that alcohol can do to the generative organs. Earlier we made reference[1] to Stockard's now widely quoted experiments demonstrating that the germ cells of males can be so injured by allowing the subjects to inhale the fumes of alcohol that they give rise to defective offspring, although mated with vigorous untreated females. The offspring of those so treated when reaching maturity are usually nervous and slightly undersized. These effects are apparently conveyed through the descendants for at least three generations. Such evidence establishes at least the probability of the transmission of serious ill effects to human offspring through alcoholic indulgence of the male parent. Stockard[2] has stated that guinea-pigs given alcohol by inhalation over a period of more than a year and a half were still good breeders, and when killed showed no signs of changes in the testicles. This is somewhat contrary to what many necropsy reports on habitual drinkers leads one to expect. It has been stated on presumably good statistical evidence from histologic study that chronic alcoholism constantly causes retrogressive changes in the testicles independent of senility or chronic diseases, even to the point of complete loss of the seminal epithelium. Weichselbaum and Kyrle[3] further maintain that the most marked changes occur in the testicles in alcoholism with cirrhosis. Lately Arlitt and Wells[4] of the Sprague Memorial Institute, Chicago, have furnished conclusive experimental evidence of the almost inevitable marked degenerative alterations in the testicles of animals to which alcohol is daily administered. They state that the changes affect the steps of spermatogenesis in inverse order to their occurrence, so that for some time before sterility and complete aspermia result, the animal is producing spermatozoa with all possible degrees of abnormality and deficiency. The possible relation of this abnormal spermatogenesis, as Arlitt and Wells state, to the production of defective offspring is obvious. No other tissue was found to be noticeably affected by the alcohol. The experimental observations of the Chicago pathologists thus harmonize with the necropsy findings in human alcoholics.

1. Alcohol and Racial Degeneration, editorial, THE JOURNAL A. M. A., Dec. 21, 1912, p. 2261.
2. Stockard, C. R.: Arch. Int. Med., October, 1912, p. 374; Arch. f. Entwcklngsmechn. d. Organ., 1912-1913, **35**, 3. Stockard, C. R., and Papanicolaon, G.: Am. Naturalist, 1916, **1**, 65.
3. Weichselbaum, A., and Kyrle, J.: Sitzungsb. Akad. Wien, 1912, **121**, 51.
4. Arlitt, Ada H., and Wells, H. C.: The Effect of Alcohol on the Reproductive Tissues, Jour. Exper. Med., 1917, **26**, 769.

BARB WIRE ENTANGLEMENTS AND ANTIVIVISECTIONISTS

The barb wire entanglement is a nasty obstruction. Any one who has attempted to climb through or over a barb wire fence knows how exasperating the trivial points of the wire may become. They never stop any one permanently, but they do hinder and delay. Now the analogy may not be an exceptionally good one, but one of the hindrances to the advance of scientific medicine has been the barb wire entanglement opposition of the petty pusillanimites who flutter around the outskirts of great movements of all kinds, hindering, obstructing, delaying, yet never actually stopping anything worth while. When it was announced that the Red Cross, whose motives are as pure as any human motive ever could be, intended to devote $100,000 for medical research with a view to alleviating the sufferings and disease of our soldiers, a lot of these narrow, one-idea minds, utterly ignorant of everything but their own particular conception of what really counts in life, set up a cry that animals were to be sacrificed and submitted to torture, and, by the living gods, their dollar was not to be spent for such a tainted purpose. Ten of them, and we shall not quote their names because to deprive them of notoriety is the worst punishment that can be meted out to them, have even filed suit in New York to prevent this expenditure. Commenting on the episode the Chicago *Herald* says:

> The ancient misunderstanding of animal vivisection has been raised to hamper the work of the Red Cross. The hoary misconception was so bandied about that thirty-eight medical officers attached to General Pershing's staff have taken the trouble to sign a statement intended to clear up the situation. One hundred thousand dollars, it appears, is to be invested in medical research.
>
> Objection is made because animals are used. A few rabbits, guinea-pigs and white rats are treated by the experimenters. The animals are first anesthetized. They suffer no pain. As a result of the medical research made by such means since the war, the death rate among wounded and sick soldiers has been greatly reduced. The pain suffered has been minimized. The antivivisectionists thus have to choose between guinea-

pigs and soldiers. Are they willing to see their sons and brothers suffer vainly because they oppose the use of animals in medical investigation?

Moreover, a reasonable affection for animals supports so-called vivisection. From the time of Louis Pasteur down, research has freed both the lower animals and the human race from the toll of disease. In truth, Pasteur's discoveries of ways of combating anthrax and hydrophobia directly decreased the ravages of these infections among sheep and dogs. The chief advance of the art of healing the suffering has been made possible by that variety of medical research which must utilize rats and guinea-pigs. The progress of mankind toward health must move in that direction.

The *Herald* pleads that the progress of the work should not be confused by awakening this obsolete error. "None who daily eat the meat of cattle, sheep or hogs and who stand back while good men offer their lives for freedom," it says, "have the right to throw stones." Isn't there some way to give back their money and cancel the memberships?

Medical Mobilization and the War

MAJOR FRANK BILLINGS ASSIGNED TO PROVOST MARSHAL GENERAL'S OFFICE

Major Frank Billings, M. R. C., who was appointed medical adviser to the governor of the state of Illinois, in the creation of the medical advisory boards, and who has been acting in this capacity, is now relieved from this duty and assigned to the Provost Marshal General's Office, Washington, D. C. It is understood that Major Billings' work in Washington will be that of adviser to the Provost Marshal, in connection with the medical problems under the Selective Service Law. Major Billings will report in Washington, February 1.

REVISION OF REGULATIONS FOR PHYSICAL EXAMINATION IN THE ARMY

On the recommendation of the Surgeon-General of the Army, a board has been appointed to fix more definitely than at present the standards by which is to be determined the physical fitness of registrants for duty under the Selective Service Law and of applicants for enlistment. The work of the board will constitute the revision of so much of the regulations issued under the Selective Service Law and of the Manual for Recruiting Officers as is related to physical examination. By this revision it is hoped to make as nearly uniform as may be practicable, the methods followed and the standards adopted by the examining physicians associated with local boards and with medical advisory boards, and to harmonize these standards with the methods and standards of officers on recruiting duty. The board consists of: Col. George E. Bushnell, U. S. Army, retired; Lieut.-Cols. Thomas L. Rhoade and Philip W. Huntington, M. C.; Majors Pearce Bailey, Joseph C. Bloodgood, Elliot C. Brackett, William H. Logan, Warfield R. Longcope, Walter R. Parker and Charles W. Richardson, M. R. C.; Contract Surg. Henry H. Morton, U. S. Army; alternate, Contract Surg. William A. Pusey, U. S. Army. The report of the board will probably be issued at an early date.

MEDICAL OFFICERS IN FRANCE APPROVE APPROPRIATION FOR RESEARCH

The Red Cross War Council recently requested specific advice from General Pershing's medical staff in France as to the desirability and value of appropriating $100,000 for medical research. The reply, which was signed by many well known medical officers, appears below. The signers include: Col. F. A. Winter, Major J. A. Blake, Major R. P. Strong, Capt. Kenneth R. Taylor, Major Alexander Lambert, Lieut.-Col. J. F. Silfer, Col. M. W. Ireland, Major William J. Esler, Lieut. E. T. Crossan, Lieut. E. Deval Kathraine Foot, Lieut. Philip M. Stimson, Major Roger I. Lee, Major Homer F. Swift, Major H. E. Robertson, Capt. John P. Peters, Junior Capt. Benjamin Jablons, Lieut. Herbert M. Bergamini, Dr. Erillou, of the Institut Pasteur; Lieut.-Col. T. W. Richards, Lieut. K. Bulkely, George C. Ross, Robert G. Le Monte, Major G. L. Gibson, Lieut. B. G. Cashman, Charles B. Maits, Frederick M. Jacob, Major G. E. deSchweintz, Major Harris P. Mosher, Capt. William L. Moss, Lieut. William H. Morris, Capt. McCall Keating, Lieut. James U. Worcester, Lieut. George M. Smith, Major Burt R. Shurly, Major Frank B. Walker, Capt. C. B. Coulter, Capt. Lester M. Hubby and Lieut. Hugh Chaplin.

THE MESSAGE

"The Medical Department of the United States Army is in full accord with all the Red Cross is doing in this regard. It is cooperating and assisting in every way in research matters and is counting upon your help in this regard. It has asked the Red Cross to help it study the many problems of preventive medicine and of medical and surgical diseases against which the Army Medical Corps must struggle.

"The research committee assists the Red Cross in the management of its funds and its experiments and controls the type and kind of experimentation. The research committee controls fully its research work against which the antivivisectionists are protesting. English medical authorities are vigorously cooperating with the Red Cross in research work.

"We feel that any one endeavoring to stop the Red Cross from assisting in its humanitarian and humane desire to prevent American soldiers from being diseased and protecting them by solving the peculiar new problems of disease, with which the army is confronted, is in reality giving aid and comfort to the enemy.

"Research work so far undertaken includes studies of anesthesia, shellshock and trench fever, which last will be the main line of investigation this winter. We are also investigating trench nephritis and foot-wound infections, including gas gangrene and tetanus. The animals used are principally guinea-pigs, rabbits and white rats. If operations causing pain to animals are performed, anesthesia is used. Actually, very few animals have been used for this work."

AN INTENSE INVESTIGATION NEEDED

The following story is from the current issue of the *Army and Navy Register:*

MYSTERY OF AN ABANDONED CAMP

The War Department was surprised this week to learn from the municipal authorities of Mineola, L. I., in the vicinity of Camp Mills, where was encamped the "rainbow division," under the command of Major General William A. Mann, that the camp had been abandoned by the troops when they went to Europe without taking with them the tents and cots used by the command while at that place. Photographs of the ruin (for such it was) were submitted to the department, showing that the rows of some 3,000 tents in a waste of snow several feet deep had been left to the sport of the elements. The tentage, where any of it was standing, was revealed in tatters, and the entire outfit is plainly a total loss to the government, estimated at about $300,000. There will be an investigation, of course, to fix the responsibility for this costly oversight. Some one in authority overlooked the fact that the tents had not been taken down and stored. The division evidently moved out and proceeded to its station in France without any thought being bestowed on what was to become of the tents the troops had occupied. The incident is inexplicable, considering all the circumstances, and the military authorities are puzzled to know how such forgetfulness could have occurred, especially at a time when there is a shortage of tentage and when a conservation of equipment is the order of the day. The untracked state of the snow at the camp, as shown in the photographs submitted, gave evidence that not even a caretaker had been left on the reservation, and the effect of the wind and storm was apparent enough in the sorry spectacle.

Here would be a fine opportunity for some medical officer to arise and ask if this is the kind of superior management he must appeal to when making a sanitary recommendation. To the slogans "Save the food," "Save the coal" and "Save the meat" we suggest be added, "Save the tents."

And the night shall be filled with music,[1]
And the troops who here spent the day
Shall [NOT] fold their tents like the Arabs,
And as silently steal away.

1. (Sad lament of taxpayers).

ATTACKS ON VENEREAL DISEASES

Surgeon-General Blue of the U. S. Public Health Service, Jan. 2, 1918, sent to all state health officers in the United States a telegram and a letter urging the importance of the sanitary problem of the control of the venereal diseases, with a plan of control. It is said that venereal infections should be made reportable and quarantinable, and that means of diagnosis and cure should be provided and a campaign of publicity launched. Cooperation in a forceful enforcement of the plan of control was requested. The plan is as follows:

1. Epidemiology.
   (a) Peculiar to the human species.
   (b) Chronic diseases.
   (c) Spread by contact—not necessarily sex contact—chronic carriers.
   (d) Very prevalent in all classes of society.
   (e) Most prevalent in classes of low inhibition.
2. Control.
   (a) Depends upon the control of infected persons.
   (b) Control of infected persons depends upon knowledge of their whereabouts.
      This may be determined by:
      (1) Morbidity reports by serial number (in the case of private practitioners), name to be disclosed when infectious persons cease treatment. Case then followed up by health department which enforces quarantine act.
      (2) Morbidity reports from venereal clinic and hospital.
      (3) Legal enactment necessary to secure morbidity reports.
      (4) Enact and enforce ordinance requiring pharmacists to keep record (open at all times to health department) of sales of drugs for the prevention and treatment of gonorrhea and syphilis.
   (c) Object of this control is to prevent contact between infected and noninfected persons.
   (d) May be obtained by:
      (1) Quarantine of infected persons.
      (2) Cure of infected persons.
      (3) Education of general public to avoid direct and indirect contact with persons infected or presumably infected.
3. Quarantine of infected persons.
   (a) Those who desire cure and can afford treatment.
      (1) These are instructed by their physicians and theoretically are thus quarantined.
   (b) Those who desire cure and can not afford treatment.
      (1) Means should be provided for the free treatment of this group.
         (a) Accurate diagnosis.
         (b) Dispensary relief.
         (c) Hospital relief.
   (c) Those who are careless or wilful in the distribution of these infections through promiscuity.
      (1) These for the most part are the ignorant or the criminal classes. Careful physical examination of all persons entering jails or other public institutions, those found infected to be isolated either in a special hospital or under a probation officer who enforces dispensary relief.
4. Cure of infected persons.
   (a) Establishment of venereal clinics by health authorities.
      (1) Federal, in zones in close contiguity to cantonments.
      (2) State, in situations where local authorities refuse or fail to establish clinic.
      (3) City, particularly those cities in which commercialized or clandestine prostitution flourishes for the patronage of soldiers but are beyond the authority of the Secretary of War.
      (4) Country, in thickly settled rural communities.
   (b) By the creation of new or the utilization of existing hospital facilities.
      (1) For the treatment of those who volunteer for treatment.
      (2) For the obligatory treatment of persons under control of the courts.
   (c) By legal enactment.
      (1) Declaring the venereal infections to be quarantinable.
      (2) By substituting confinement to hospital for confinement to jail in the case of those convicted by courts and having venereal infections.
      (3) By substituting remanding to a probation officer for the imposition of fines.
      (4) To carry out 2 and 3 it is necessary that all persons arrested be examined by the city physician or other authorized person.
      (5) By arrest of acknowledged and clandestine prostitutes by police-women.
5. Public education.
   (a) Relieve problem of all moral and social issues and place campaign solely on basis of control of communicable disease.
   (b) Propaganda of wisely conducted publicity.
      (1) Through public meetings addressed by forceful speakers.
      (2) Through public prints.
      (3) By placarding public toilets, placards to emphasize danger of venereal diseases and to recommend prompt treatment either by competent physician or at the free veneral clinic.
      (4) By follow-up work by social workers.
      (5) By the education of infected persons.
         (a) By physicians in private practice.
         (b) By venereal clinic and hospital.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

Extracts from Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending Jan. 4, 1918

1. Annual admission rate per 1,000 all troops in U. S. (Disease only) (Except Aviation Section, Signal Corps) 1,374.4
   Noneffective rate per 1,000 on day of report 41.7
2. National Guard Camps—
   Admission rate per 1,000 all divisions (disease only) 1,368.7
   Noneffective rate per 1,000 on day of report 47.9
   Divisions showing admission rate for diseases higher than average: Camps Wheeler, Kearny, Cody, Beauregard, Logan, Bowie and Doniphan.
   Divisions showing noneffective rates higher than average: Camps Beauregard, Wheeler, Kearny, Cody, Doniphan, Bowie and Shelby.
3. National Army Camps—
   Annual admission rate per 1,000 all divisions (disease only)..1,554.8
   Noneffective rate per 1,000 on day of report (all divisions).. 43.4
   Divisions showing admission rate for disease higher than average: Camps Travis, Pike, Funston, Dodge and Lee.
   Divisions showing noneffective rate higher than average: Camps Pike, Funston, Lee, Travis, Dodge, Jackson, Zachary Taylor and Lewis.
4. Venereal Diseases—
   Annual admission rate Regulars in United States..... 84.8
   Annual admission rate National Guard (Divisions in U. S.)... 54.5
   Annual admission rate National Army (Divisions in U. S.).. 64.4
   National Guard Divisions having rate above average: Camps Logan, Wadsworth, Doniphan, Sevier and McClellan.
   National Army Divisions having rate above average: Camps Pike, Dodge, Jackson, Grant and Meade.
5. Number of cases of pneumonia 623
   Highest number in any one Division (90th) 72
   Number of cases of meningitis 97
   Highest number in any one Division (39th) 26

6. NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING Jan. 4, 1918

Division	Pneumonia	Dysentery	Malaria	Venereal	Paratyphoid	Typhoid	Measles	Meningitis	Scarlet fever	Deaths	Noneffective per 1,000 on day of report
27th, Wadsworth...	10	...	...	38	..	..	33	1	..	2	25.2
28th, Hancock.....	1	...	...	24	..	..	5	1	..	3	22.7
29th, McClellan....	3	...	...	28	..	..	48	4	3	4	34.2
30th, Sevier.....	25	...	...	31	..	..	8	..	..	8	31.5
31st, Wheeler.....	37	...	...	8	..	..	3	2	..	16	69.7
32d, MacArthur....	12	...	...	21	..	..	19	..	13	4	47.4
33d, Logan.....	6	1	1	79	..	..	94	..	..	2	38.1
34th, Cody.....	30	...	...	24	..	..	16	2	2	13	64.9
35th, Doniphan.....	9	...	...	31	..	..	63	..	..	11	64.4
36th, Bowie.....	23	...	...	25	..	..	1	2	..	13	58.6
37th, Sheridan.....	5	...	...	17	..	..	6	1	..	1	17.6
38th, Shelby.....	7	...	...	27	..	..	8	..	..	11	53.8
39th, Beauregard...	35	7	7	20	..	..	8	26	..	21	86.8
40th, Kearny.....	58	...	...	14	..	..	83	..	44	7	68.8
76th, Devens.....	2	...	...	13	..	..	38	..	1	1	29.6
77th, Upton.....	12	...	...	9	..	..	2	1	..	6	23.5
78th, Dix.....	2	...	...	22	..	..	10	..	..	0	35.3
79th, Meade.....	7	...	...	54	..	..	53	1	4	1	28.6
80th, Lee.....	59	...	...	19	..	1	111	6	..	26	63.5
81st, Jackson.....	17	...	1	33	..	..	40	15	..	18	51.1
82d, Gordon.....	9	...	...	23	..	..	200	11	..	10	39.4
83d, Sherman.....	5	...	...	16	..	..	122	2	6	2	32.7
84th, Taylor.....	21	...	...	25	..	..	33	2	..	10	50.3
85th, Custer.....	3	...	...	26	..	..	43	..	..	1	24.2
86th, Grant.....	6	...	...	40	..	..	97	..	2	1	25.6
87th, Pike.....	66	...	...	154	..	..	200	4	26	49	68.5
88th, Dodge.....	10	...	...	50	..	..	77	1	3	4	56.5
89th, Funston.....	7	...	...	6	..	..	157	4	8	11	65.5
90th, Travis.....	72	...	2	25	..	..	46	1	..	22	61.8
91st, Lewis.....	6	...	...	31	..	..	...	1	29	5	45.3

7. ANNUAL RATE PER THOUSAND FOR SPECIAL DISEASES

	Regulars, U. S. Army, in U. S. only, 1916*	Regulars in U. S., Week Ending Jan. 4, 1918	National Guard, All Camps, Week Ending Jan. 4, 1918	National Army, All Camps, Week Ending Jan. 4, 1918
Pneumonia.....	2.59	18.8	33.9	35.8
Dysentery.....	3.97	2.5	0.1	0.0
Malaria.....	12.52	0.8	1.1	0.3
Venereal.....	91.23	84.8	54.5	64.4
Paratyphoid.....	0.31	0.0	0.0	0.0
Typhoid.....	0.21	0.0	0.0	0.1
Measles.....	20.28	84.6	55.6	156.7
Meningitis.....	0.29	1.6	5.4	5.7
Scarlet fever.....	0.59	4.0	8.7	9.3

* Enlisted men only, both white and colored.

PHYSICAL CAUSES FOR REJECTION OF REGISTRANTS

The Provost Marshal General, in his report of the operation of the selective service, says:

Rumors here and there in the public press stated that the camp surgeons had discovered, among the men accepted by the local boards, some with glass eyes, some with cork legs, and some with other obvious disqualifications. If such men were found, no disparagement is involved for the local board surgeons; for it is safe to assert that such grossly defective persons came from the contingent of about 20,000 men who had never appeared before the local boards, but had been gathered up by the adjutants general and sent direct to the camps. There is no ground for supposing that the local board surgeons were either incompetent or careless to that extent. The spirit of their practice was to make all intendments in favor of the government; but nothing permits us to suppose that they would or did send to camp any men with cork legs or glass eyes.

PERCENTAGES OF REJECTIONS

Doubtless the local boards varied extremely in the strictness of their examinations. But so also, it seems, did the camp surgeons. The table shows that the percentage of rejections at camp varied between 0.72 per cent. and 11.87 per cent.; and as the physical condition of the men from the different regions cannot entirely account for this, it must be attributable in part to differences of strictness in the examinations by the camp surgeons:

Specific Camp Showing for Physical Rejections	States Contributing to Camp	Number Arrived	Number Rejected	Per Cent. Rejected
Camp Custer	Michigan, Wisconsin	17,487	1,660	9.49
Camp Devens	Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont	36 082	4,281	11.87
Camp Dix	Delaware, New Jersey, New York	19,804	1,573	7.94
Camp Dodge	Illinois, Iowa, Minnesota, North Dakota	20,505	690	3.36
Camp Gordon	Alabama, Georgia, Tennessee	19,935	1,556	7.80
Camp Grant	Illinois, Wisconsin	26,658	1,148	4.30
Camp Jackson	Florida, North Carolina, South Carolina	17,754	1,975	11.12
Camp Lee	Pennsylvania, Virginia, West Virginia	36,938	920	2.49
Camp Lewis	California, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming	46,313	5,095	11.00
Camp Meade	District of Columbia, Maryland, Pennsylvania, Tennessee	35,971	2,245	6.24
Camp Pike	Alabama, Arkansas, Louisiana, Mississippi	24,389	1,819	7.46
Camp Riley	Arizona, Colorado, Kansas, Missouri, Nebraska, New Mexico, South Dakota	38,975	281	0.72
Camp Sherman	Ohio, Pennsylvania	9,850	1,012	10.27
Camp Taylor	Illinois, Indiana, Kentucky	27,103	2,143	7.68
Camp Travis	Oklahoma, Texas	32,716	993	3.03
Camp Upton	New York	31,423	2.318	7.38
Totals		442,733	29,709	

But were the Surgeon-General's rules for physical examination, as set forth in the directions to the local boards, stricter than necessary for securing efficient fighting men? On this point the civilian surgeons have expressed variant opinions. A large majority consider that the physical requirements are not too exacting. But a considerable number deem the requirements too strict in many respects, notably as to the weight and height relation, teeth, eyes and feet, and contend that the regulations as strictly applied tend to exclude many capable and efficient men. For example, one board cited a case of exclusion for flatfoot of a man who had for many consecutive seasons endured the hardships of a guide's vocation in the Canadian forests; and the prevalence of flatfoot among sturdy negroes of the South was frequently commented on.

FEW ATTEMPTS AT DECEPTION

It is gratifying to report that falsification was attempted to only a slight and negligible extent. Here and there a board reports a locality as showing 50 per cent. of attempted falsification; but these instances were sporadic, and represent only some local obliquity of morals.

Of the various grounds for rejection, which were the most common? It must be left to the future to study accurately the valuable mass of data now latent in the records. Time has sufficed only to examine a small group of the records of rejections; 10,000 men were represented, spread over eight camps. The specific source of defect showing the largest percentage was eyes; and the next largest, teeth. The figures for the principal causes of rejection are as follows:

Causes for Physical Rejections	Number	Per Cent.
Total number of cases of physical rejections considered	10,258	
Alcoholism and drug habit	78	0.77
Physical undevelopment	416	4.06
Teeth	871	8.50
Blood vessels	191	1.86
Bones	304	2.96
Digestive system	82	0.80
Ear	609	5.94
Eye	2,224	21.68
Joints	346	3.37
Muscles	66	0.64
Respiratory	161	1.56
Skin	118	1.15
Flatfoot	375	3.65
Genito-urinary (nonvenereal)	142	1.39
Genito-urinary (venereal)	438	4.27
Heart disease	602	5.87
Hernia	766	7.47
Mentally deficient	465	4.53
Nervous disorder (general and local)	387	3.77
Tuberculosis	551	5.37
Underweight	163	1.59
Ill defined or not specified	93	0.91
Not stated	809	7.89

NEWS OF BASE HOSPITALS

Base Hospital No. 13, Presbyterian Hospital, Chicago, has been mobilized and left during the past week for Fort McPherson, Ga., for training preparatory to service. The medical personnel of the hospital includes: Lieut.-Col. Chandler P. Robbins, M. C., U. S. Army, commanding officer; Major Dean D. Lewis, director; medical staff: Capts. R. C. Brown, Lewis G. Pollock; Lieuts. L. C. Gatewood, Charles F. Pickering, G. O. Solem, William A. Taylor and Donald P. Abbott; surgical staff: Capts. V. C. David, A. H. Montgomery and Warren P. Sights; Lieuts. Angus L. Cameron, Andy M. Cass, McMicken Hanchett, Wilmer D. McGrath, E. M. Miller and William T. Robinson; laboratory: Lieuts. Thomas D. Allen, W. E. Gatewood; registrar: Capt. Basil C. Harvey; roentgen ray: Capt. Arthur R. Metz; dentist: Lieut. Walter M. Morgan; chaplain: Capt. Edward N. Ware.

NEWS OF THE CANTONMENTS

Twenty-Eighth Division, Camp Hancock, Augusta, Ga.

JAN. 12, 1918.

Announcement is made of the marriage of Lieut. Charles McGivern, M. C., assigned to ammunition train, to Mrs. Lois Martin of Philadelphia.

Wednesday, January 9, the medical officers of the Twenty-Eighth Division were given a written test covering a two and one-half months' course of training.

Lieut. Charles M. Griffith, M. R. C., from Tennessee, attached to the One Hundred and Ninth Infantry, has been promoted recently to the rank of captain.

Thirty-First Division, Camp Wheeler, Macon, Ga.

JAN. 12, 1918.

INFECTIOUS DISEASES

Pneumonia is still the most feared disease of this camp. Now that there is no more measles, it appears that the weather influences the rate. A few days of damp weather are followed by more cases, while there are fewer in dry cold weather. Two or three cases a day seem an average, but bad weather causes a rise to six or eight, or even more.

Meningitis has appeared in Macon with ten cases during December and January, and four deaths recently. It did not come from this camp.

Mumps are causing a high sick report, running from 50 to 100 new cases a day. The disease is not considered serious.

Empyema is a serious complication of pneumonia. About 7 per cent. develop empyema, and of these many die. Those who recover are practically all disabled permanently.

The pneumonia convalescents that were sent to General Hospital No. 6, at Fort McPherson, are beginning to return for duty, after a stay of about twenty-four days.

PROMOTIONS IN NATIONAL GUARD

The lieutenants of the National Guard that have completed one year's service will be examined for promotion in the near future. The examining board will consist of Lieut.-Col.

Louis C. Duncan, M. C., U. S. Army, Major James A. Livingston, M. C., N. G. Medical Reserve Corps officers are not included in the examination.

LECTURES ON VICE CONTROL

Major Turck addressed a meeting of the Macon Ministerial Association at the Y. M. C. A. Building in Macon on Thursday. The subject was vice control in the interest of the soldier. Very effective work has been done in Macon by the new city administration, and the conditions as to prostitution have been much improved.

BASE HOSPITAL NOTES

During the rain storm last evening the convalescent tents were blown down, but not before patients had been removed to the adjacent wards. Under the direction of the commanding officer all government property save the tents themselves were put under shelter. Much damage was done to the framing of the tents, and the commanding officer is considering replacing them with frame shacks. No patients were injured, nor does the experience seem to have done them any harm.

There has been a slight increase in the number of patients under treatment in the hospital during the week, the census showing 1,273 yesterday, this being due to the increase in the number of mumps cases being admitted.

A routine examination of the division for meningitis carriers is being systematically done. With the small force of officers on duty there, the laboratory force is kept exceedingly busy.

Major Herbert P. Cole, Lieutenant Cook, Lieutenant Donnelly and Lieutenant Wumkes have been ordered to Fort Riley, Kan., to join Evacuation Hospital No. 12 for service overseas.

The installation of beaver board ceiling and sheathing is progressing rapidly. It adds greatly both to the comfort and appearance of the wards.

NOTES OF ONE HUNDRED AND SIXTH SANITARY TRAIN

Capt. Fred Boyd, commanding Ambulance Company No. 124, has returned from leave of absence and taken up his duties.

Capt. Richard C. Rush is still on detached service at Camp Gordon with the selectmen to come to this division.

Major Lorin A. Greene, commanding Field Hospital No. 121, has been on sick report for the past week.

It is with regret that seven of our oldest and most competent men were transferred as part of the personnel of General Hospital No. 6, Fort McPherson, Ga. Our immediate loss is surely the gain to them.

Eightieth Division, Camp Lee, Petersburg, Va.

JAN. 12, 1918.

COURSE OF INSTRUCTIONS

During the month of December the training of the enlisted personnel of the Medical Department has been delayed by bad weather, mud, rain and much snow and cold in the "Sunny South." Instruction that could be given indoors has progressed steadily. The regular meetings of the medical officers have been held. Three interesting lectures have been given by Capt. James T. Rugh, M. R. C., on the care of the feet and other minor orthopedic defects. Capt. Jerome L. F. Toujan, one of the French officers attached to the division, gave an interesting lecture on the work of the regimental detachments with infantry during an attack and while remaining in trenches under fire. This lecture was instructive and much appreciated by the medical officers.

HEALTH OF CAMP LEE

During December an additional number of cases of mumps and measles developed, largely confined to the Three Hundred and Seventeenth and Three Hundred and Eighteenth Infantry who come from rural districts of Virginia. Up to January 7, there have developed in Camp Lee 1,440 cases of mumps, 823 of measles, 122 of pneumonia and nineteen of meningitis, one case of diphtheria, one of smallpox and two cases of chickenpox. There have been nineteen deaths from bronchopneumonia following measles, a number of these having general septic conditions, empyema, peritonitis and pericarditis, and sixteen from other types of pneumonia. There have been six deaths from meningitis.

THREE HUNDRED AND FIFTH SANITARY TRAIN

The training of officers and enlisted men has suffered on account of the lack of sufficient enlisted men to fill out the companies. The work in several companies will have to be gone over a second time when the companies are filled. The men, however, have been instructed in litter work, bearer work, both on the field and in the trenches. The recent epidemic of mumps and measles has furnished an excellent opportunity for the men to learn something of nursing, as fifty men from the field hospital were detailed to the base hospital to act as wardmasters. They have already had three weeks' experience at this work. The opening of two convalescent camps for mumps and measles cases has required further assistance, and the men from the ambulance companies have also recently had an opportunity to learn something of hospital routine and wardmaster work.

LABORATORY WORK

The bacteriologists have been hard worked these days examining cultures for carriers in a dozen different companies, differentiating types of pneumonia, examining cooks to detect possible typhoid carriers and other routine work. Lieuts. F. W. Humphries, E. J. Asnis and George R. Moffitt, M. R. C., are the bacteriologists attached to the base hospital.

BASE HOSPITAL

Early in December before measles made work severe, the nurses gave a dance at the club rooms of the Y. M. C. A. at the camp. Miss Beecroft received the nurses and officers who attended, and the dance was most enjoyable. Music was furnished by the Three Hundred and Twentieth Regimental Band.

The work of the hospital has increased both in the medical, surgical and special services, due largely to bronchitis, tonsillitis with a number of severe septic infections, as well as the frank cases of pneumonia and bronchopneumonia following measles.

PERSONAL NOTES

Lieut. Grover B. Gill, M. R. C., was quite ill recently from hemorrhage following tonsillectomy.——Lieut. William J. Robbins, M. R. C., is recovering from a fracture of the neck of the femur.——Lieuts. Dwight W. Rivers and Nicholas B. Cannady, M. R. C., are convalescent from mumps.——Lieut. Bennet A. Burks, M. R. C., had an attack of German measles last week. We know nothing else German about him.——Major Ferdinand Schmitter, M. C., recently took his examination for promotion.——Lieut. Benjamin J. Slater, M. R. C., was recently ordered to the Army Medical School for training for the regular medical corps.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

JAN. 7, 1918.

BOARD OF REJECTIONS

A board has convened for the purpose of recommending the discharge of drafted and enlisted men on surgeon's certificate of disability. The members of the board are Major Junius McHenry, Capts. Charles Barton and John J. Moren, medical officers at the base hospital.

Under authority from the War Department, three officers from the Quartermaster's Department have been detailed to take not more than four trips a week, for four weeks, to West Point and Elizabethtown, Ky., in connection with the preparations for the artillery target range. This field is located near Salt River about 20 miles from Camp Taylor, and preparations are being made to house men on the grounds during their period of attendance at the artillery school.

BASE HOSPITAL

Owing to the cold weather, officers and nurses of the base hospital were subject to many inconveniences, mostly from insufficient heat and shortage in supply of water, owing to frozen pipes. The patients, however, did not suffer, as by dint of much hard work the officers and nurses were able to keep the patients comfortable.

Rev. Paul Bagby has been appointed hospital secretary, and in the future will devote all his time to looking after the sick and those who are recuperating. He hopes to have a building erected for convalescents and those who are recuperating in order that they may be entertained and have an opportunity to see their friends in pleasant surroundings. The Army Y. M. C. A. has already done much for those who are ill at Camp Zachary Taylor. Literature and stationary have been distributed, and occasionally flowers have been bought. Nothing seems to be appreciated by the men more than flowers.

A comparison of the sick report for this month with that of last shows that there was some increase in the percentage. Pneumonia has caused the largest number, with the record showing forty-three cases in the base hospital. It has caused twenty deaths since the camp opened. The pneumonia has been principally of the secondary bronchopneumonia type following measles.

The health report shows 928 in the base hospital—159 in quarters; eight deaths have occurred from pneumonia, one from empyema and one from pericarditis.

STREETS NAMED

Camp Zachary Taylor took on the appearance of a real city last week when the plans for naming every street were completed. The three main thoroughfares are to be named Kentucky, Indiana and Illinois avenues. Other thoroughfares are to bear the names of former presidents, counties of the three states, and generals of the American Revolution. Signs will be posted at the beginning and end of each avenue and street. The military police will regulate the traffic at busy corners throughout the camp.

A new building at the camp was thrown open by appropriate ceremonies last week. It is officially known as the Hostess House. It is situated very close to the end loop of the care line, and across the road from the base hospital. It is especially designed to give aid to women visitors at the camp who are in distress, or to give any assistance desired by women who come there to see relatives and friends. The staff of the "house of welcome" has been named, and the activities are in operation. The work is conducted directly from New York through division managers, and cooperates with the Young Women's Christian Association. They have been established at twenty-two camps and cantonments, and houses are in process of erection or authorized at fourteen other camps.

Waste of water in the camp will be stopped, under a general order just issued. All officers must see that faucets are kept turned off when not in use. All alcohol and intoxicating drinks brought into camp are confiscated and turned over to the camp quartermaster, who corresponds directly with the chief of ordinance in regard to its disposal.

OVERSIZE MEN AT THE CAMP

Lieut.-Col. Van Duyne, division quartermaster, has found the men at Camp Zachary Taylor are larger than the average soldiers. The demand for large sizes in uniforms has left a surplus of smaller sizes on hand. The largest shoes issued in the Army are No. 12, but one man is here who needs a No. 14, and it became necessary to issue orders to the manufacturers to fit this man. Some men were too fat for outfits; but regular exercise and drilling has trained them down so that the largest sizes in uniforms fit them.

ARMY LEVELS SOCIAL BARRIERS

That all Americans are equal has certainly been demonstrated in National Army camps. Laborers walk side by side with employers, graduates from famous universities drill side by side with the man who cannot read or write, and sons of rich men are in the ranks with men much less fortunate from a monetary standpoint.

One captain in the Three Hundred and Twenty-Seventh Artillery recently stated that he would save up his pay so he could purchase an automobile. His orderly, who overheard his remark, said, "Sir, I would be more than glad to write home and have them send one of my cars here for your use." The foreign officers here have been loud in their praise of the spirit of the American soldier, here and abroad, and of their willingness to learn.

MISSTATEMENT REGARDING TYPHOID FEVER

The following letter from Division Surgeon J. H. Allen, Lieutenant-Colonel, M. C., has been received by your correspondent, and it is a pleasure to reproduce it. Our original notes stated there were two cases of typhoid fever, and the error crept into the completed copy.

I notice in the issue of THE JOURNAL of Dec. 27, 1917, the statement that Camp Zachary Taylor has twenty-three cases of typhoid fever. This is an error, and one that puts us in a very bad light on this question. At the time when these data were obtained there were only two cases of typhoid fever in Camp Zachary Taylor. Since the organization of this division there have been only five cases of typhoid fever all together, and one of these was a doubtful case, as at no time was a positive blood or stool culture obtained. We have at present only one case carried as typhoid fever, and this is a convalescent one that was admitted early in November. Will you not kindly correct the statement as soon as possible?

Eighty-Seventh Division, Camp Pike, Little Rock, Ark.

JAN. 12, 1918.

NEW ASSIGNMENTS

There has been a general reassignment within the commissioned personnel of this division since the beginning of the year. The following transfers have been made: Lieut. W. E. Whalen of Utah has been relieved from Field Hospital Company No. 345 and assigned as commanding officer of Ambulance Company No. 345; Lieuts. J. W. McGuire and F. N. Bjerken from the Regimental Infirmary, Three Hundred and Forty-Sixth Infantry, to Field Hospital Company No. 345; Capt. S. W. McCool from Regimental Infirmary, Three Hundred and Forty-Fifth Infantry, to Field Hospital Company No. 347; Capt. J. B. Slack from Field Hospital Company No. 348 as commanding officer, to Ambulance Company No. 348 in the same capacity; Lieut J. W. Powers from Field Hospital Company No. 345 to Field Hospital Company No. 348. The following have been relieved from Field Hospital Company No. 345 and assigned as commanding officers of the following field hospitals: Lieut. John N. Thorpe to Field Hospital Company No. 346, Lieut. R. P. Yeagle to Field Hospital Company No. 347, Lieut. H. J. Huene to Field Hospital Company No. 348. Capt. Nolan Stewart of Ambulance Company No. 345 has been promoted to a majority and made director of Ambulance Companies 312, Sanitary Train. Capt. W. S. Carstopher, who has been in command of Field Hospital Company No. 347, has been transferred to Machine Gun Battalion No. 336; Lieut. C. P. Rutledge, from Field Hospital Company No. 347 to Regimental Infirmary, Three Hundred and Forty-Sixth Infantry; Lieut. David Seinkowitz, from Field Hospital Company No. 348 to Regimental Infirmary Three Hundred and Forty-Sixth Infantry; Capt. Thomas McCabe, from command of Ambulance Company No. 348 to Infirmary No. 3, One Hundred and Sixty-Second Depot Brigade; Lieut. DeLamar Turner, from Field Hospital Company No. 348 to Regimental Infirmary Three Hundred and Forty-Sixth Infantry.

COURSE IN FRACTURES

An officer has been designated from each ambulance and field hospital company to take a four weeks' course in fractures at Chicago. The following officers have taken up this course: Capts. J. B. Steele and C. H. Lerrigo; Lieuts. J. N. Thorpe, Emerson Megrail, W. F. Jillson, D. Bradley and H. N. Ingram.

NEW ARRIVAL

Capt. Howard Fletcher has arrived at Camp Pike, and has assumed duties at the base hospital.

QUARANTINE

It has been announced that about February 1 the quarantine maintained against Camp Pike will probably be lifted. This, it is hoped, will enable the various sanitary units at this point to make up their full complement. At present the Sanitary Corps is about half full. The sections, however, that require special training are not waiting for the full number. A highly intensive course of training is being carried on in the field hospital section under the direction of Major R. H. Davies. This includes all features possible, but especial emphasis is being laid on the most practical side of the work, care of the sick and wounded, tent pitching, transportation problems and general sanitary regulations in camp and on the march. A special effort is being made to develop an *esprit de corps* among the officers and men and to produce in an appreciable degree a soldierly bearing that will command respect both at home and abroad.

COOPERATION WITH LOCAL BOARDS

Because of the very inadequate character of the medical examinations conducted by the local boards in this section, as evidenced by the poor physical specimens sent to Camp Pike, it has been decided to detail a certain number of medical officers to visit the various local boards for the purpose of demonstrating the proper method of conducting a physical examination. The assignment will appeal to southern members of the Medical Reserve Corps, but to those who have had some experience in mustering in National Guard units, the rose is not entirely without its thorns.

FOOT INSPECTION

An order recently received by the division surgeon's office was to report "at once" on the inspection of a series of 5,000 pairs of feet, noting the condition of the feet and the fitting of the shoes.

CONVALESCENT CAMP

The convalescent camp in the Three Hundred and Twelfth Sanitary Train is taking care of all work along this line in this division, and contains over 300 cases at the present time, classified as meningitis carriers, measles convalescents, and those in quarantine because of exposure to smallpox. The smallpox group consists of over 125 colored troops who have been in quarantine nearly sixty days, new cases having broken out from time to time and the period of quarantine being extended twenty-one days automatically with each new case. The problem of handling as large a number of men as this, and of this particular type, for so long a period is quite a strenuous one. The measles convalescents present a great many medical problems, as a certain percentage develop pneumonia after reaching the convalescent barracks. A large number of cases of otitis media has developed among these patients. The convalescent camp is at present occupying a row of five barrack buildings in the area between the Third Officers' Training Camp and the Three Hundred and Twelfth Sanitary Train.

EXTRACANTONMENT ZONE

Col. Robert M. Thornburgh, division surgeon, has detailed three medical officers from this camp to assist in the examination of hotels, restaurants, barber shops, manicuring parlors, etc., in Little Rock. Mucous patches have been found in the throats of a number of female employees in some of the leading hotels in that city. The sanitary conditions of some of these places has also been so bad as to necessitate the forbidding of soldiers to enter them.

HEALTH CONDITIONS

Health conditions at Camp Pike are apparently gradually improving. There is still a large number of cases of measles, although trifling in comparison with conditions a month or two back. Meningitis seems to be well under control and very few new cases are developing. Smallpox is apparently well under control, there being no new cases for the last ten day period. The typical "barracks cough," which swelled into a grand chorus at "reveille" and "retreat" a few months back, is rarely heard at present. The present physical condition of the nearly 35,000 troops stationed here appears excellent when inspected at drill or on parade. The majority appear thoroughly fit physically for the arduous duties awaiting them.

Eighty-Ninth Division, Camp Funston, Fort Riley, Kan.

JAN. 16, 1918.

Those camps whose men have been drawn from centers of urban population have had a very low noneffective rate compared with the camps whose men have come from country and farming districts. The latter is the case in this camp, and as a result we have had to contend with epidemics of the usual diseases of childhood among these men, who have never before been exposed to them.

For a while, it was meningitis; this has now been controlled. There has been no case reported since December 30, and there were but twenty-eight cases during December, with four deaths. The disease is endemic in several of the states from which the men of this division were drawn.

Measles ran along coincidently with meningitis, with a number of bronchopneumonias and empyemas as complications, there being twenty-four deaths from these causes. We had 924 cases of measles. The epidemic has about run its course, and very few new cases are coming in now.

On the other hand, German measles has just begun, there being ninety-seven cases from December 18 to 31, and new cases are being admitted daily. The same is true of mumps, there having been 227 cases during December, and the incidence has been increasing daily during January.

There were twelve cases of scarlet fever during December, and forty-one cases of lobar pneumonia, with twenty-seven deaths.

An interesting work is being carried on among the men of the regiment. Volunteers are being vaccinated with a meningococcus vaccine composed of a number of strains of heat-killed meningococci. Blood is taken from the vein for agglutination tests before the initial dose is given, and the blood is also subsequently tested after each dose, three doses in all being given. This work has not yet progressed far enough to warrant judgment of the results of the vaccination or publication of the facts noted in connection with it.

VETERINARY SERVICE

Major Bemis, V. C., has been ordered to leave the office of the division surgeon of the Eighty-Ninth Division and proceed to another camp to organize a veterinary hospital for immediate service overseas. The work of the veterinary corps with the armies of the Allies in returning sick and wounded horses to duty has been exceptionally noteworthy in this war. Major Bemis was formerly surgeon in the Veterinary College at the Iowa Agricultural College at Ames.

ROBBERY AND MURDER

The work of the entire camp has been upset by the brutal murder of four civilians and severe wounding of a fifth by Capt. Lewis J. Whisler of the Three Hundred and Fifty-Fourth Infantry Regiment of this division. Whisler held up the Bank of Funston, which is located in a small frame shack on the amusement zone of the camp, between 7:15 and 9 p. m., on the night of January 11. It was bitter cold, 20 degrees below zero, the coldest night in six years, and the robbery was evidently carefully planned as regards weather, time and other details. At the point of a pistol, the robber tied up the five men found in the bank, robbed it and was leaving, when he overheard one of his victims remark that he recognized him. This caused him to return, and with the sharp blade of a new ax, which he had brought with him, he killed four of his victims and thought he had killed the fifth. He nearly succeeded, and had it not been for the prompt use of heart stimulants given him by the two surgeons when the crime was discovered, it is doubtful whether the sole survivor would still be alive. He made a statement to the surgeon on regaining consciousness that a captain had done it. The skulls of the other four men were badly fractured, and in each of the four cases the entire head and face were horribly mutilated and discolored. The murderer committed suicide within eighteen hours after his crime, using an Enfield rifle, for the net thrown around the camp made escape impossible. Medical officers were detailed to make finger prints of every officer in the division and no man was allowed to leave camp. The murderer left a note that cleared matters up, and bloody clothes were found in his room. This murder cannot help but suggest to the mind of the medical officer the advisability of putting candidates for officers' training camp through a rigorous mental test and of obtaining a history of a man's past and antecedents. This captain is said to have been very erratic; he was difficult to get along with, having had one officer court-martialled and attempting to have two others; he was divorced, and in debt. The amount of money he secured is not yet known, nor has any of it but $35 been recovered. It is stated by Major Smith to be between $40,000 and $60,000.

SPECIAL DUTY

Capts. C. E. Jenkins, O. L. Garlinghouse, W. B. Heagerty and F. M. Manson of the Medical Reserve Corps left the division, January 14, on special duty. They are to make an itinerary of local boards of the states from which the drafted men of this division are drawn. They are to assist the local boards in organizing the examination of recruits and aid them in avoiding the sending of men unfit for service to this camp by recounting to them in a tactful and cooperative manner some of their common experiences with the drafted men sent to camp during the past three months.

ORDERS TO OFFICERS OF THE MEDICAL CORPS

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. IVY A. PELZMAN.

To Camp Greene, Charlotte, N. C., *Camp Wadsworth*, Spartanburg, S. C., *Camp Gordon*, Atlanta, and *Camp Hancock*, Augusta, Ga., to make special sanitary inspections at these camps, and on completion *to Wilmington, N. C.*, to investigate and report on the desirability of that locality for the establishment of a convalescent hospital, and on completion *to his proper station*, Lieut.-Col. CHARLES F. MORSE.

To Camp Greene, Charlotte, N. C., for duty, Lieut. LEROY T. HOWARD.

To Fort Riley, as commanding officer of Evacuation Hospital No. 11, Lieut.-Col. ARTHUR W. MORSE.

To Camp Greene, Charlotte, N. C., for duty, Lieut. WILLIS P. BAKER.

To Fort Oglethorpe, to investigate the training facilities at that post, and on completion *to his proper station*, Lieut.-Col. CHARLES F. CRAIG and Col. FREDERICK P. RUSSELL.

To Camp Dodge, Des Moines, Ia., *Camp Grant*, Rockford, Ill., *Camp Sherman*, Chillicothe, Ohio, *Camp Meade*, Annapolis Junction, Md., *Camp Dix*, Wrightstown, N. J., *Camp Upton*, L. I., N. Y., to investigate the conditions, and to supervise the organization and construction of the Sanitary Personnel of the 92d Division at these camps, and on completion *to his proper station*, Major PERRY L. BOYER.

To Washington, D. C., and report to the Surgeon-General for duty in his office, Major EDWARD D. KREMERS.

To Camp Logan, Houston, Tex., for duty, Lieut. FRED G. BENTON.
To Camp Fremont, Palo Alto, Calif., for duty, Lieut. ALBERT B. PAVY.
To Camp McClellan, Anniston, Ala., for duty, Lieut. WILLIAM H. DANIELS.
To Camp Logan, Houston, Texas, base hospital, Lieut. CHARLES C. AYROS.
To New York City, for duty in connection with the work of developing special hospitals, and on completion *to his proper station,* Major EDGAR KING.
To Washington, D. C., for the purpose of organizing Stationary Laboratory No. 2, Major CLARENCE L. COLE.
To Camp Dix, Wrightstown, N. J., for duty, Lieut. VAL E. MILTENBERGER.
To Camp Wadsworth, Spartanburg, S. C., for duty as divisional psychiatrist, Lieut. BARRY J. WORTHING.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp McClellan, Anniston, Ala., base hospital, from Chicago, Lieut. W. THEODORE LANGLEY, Camp Hill.
To Canal Zone, Panama Canal Dept., for duty, Capt. HENRY GOLDTHWAITE, Mobile.
To Fort Oglethorpe, for instruction, Lieuts. HIRAM O. BARKER, Cardif; HENRY G. WADDELL, Dadeville; JAMES L. NORTHINGTON, Hamilton.
To Hoboken, N. J., for duty, from Army Medical School, Lieut. JOHN D. DICKSON, Birmingham.
To his home and honorably discharged on account of being physically disqualified for active service, Capt. EUGENE Y. MALONE, Samson.

Arizona

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. ROGER V. PARLETT, Whiteriver.

Arkansas

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson, Lieut. GEORGE E. BOOTH, Lake Village.
To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 2, from Fort Oglethorpe, Lieut. MARSHALL ALLEN, Okean.
To his home and honorably discharged, Lieut. WILLIAM F. AKIN, Branch.

California

To Camp Bowie, Fort Worth, Texas, base hospital, from Presidio, Capt. GEORGE A. FIELDING, Sawtelle; from Camp Meade, Lieut. THOMAS R. PETCH, Eureka.
To Camp Fremont, Palo Alto, Calif., for duty, Lieut. RUSSELL W. PRINCE, Los Angeles.
To Camp Kearny, Linda Vista, Calif., base hospital, Lieut. HERBERT P. NOTTAGE, Alameda; from Camp Lewis, Lieut. GABRIEL J. J. VISCHI, San Francisco.
To Camp Lewis, American Lake, Wash., Aviation Section, Signal Corps, for temporary duty, from Camp Lewis, Capt. WILLIAM H. ROBERTS, Pasadena.
To Rockefeller Institute, New York, for instruction, Lieut. ALBERT J. SCHOOL, Jr., Los Angeles.
To the Presidio, San Francisco, Calif., for duty, Capt. LEONARD W. ATKINSON, Napa.
To San Antonio, Texas, Kelly Field, for duty, from Houston, Capt. LORENZO F. LUCKIE, Los Angeles; to make special examination of the command for tuberculosis, from Camp Travis, Capt. HENRY ABRAHAM, San Francisco.
To his home and honorably discharged on account of being physically disqualified for active service, Capt. RICHARD S. ANTHONY, Los Gatos.

Colorado

To San Antonio, Texas, Kelly Field, to make special examination of the command for tuberculosis, from Camp Travis, Capt. ALEXIUS M. FORSTER, Colorado Springs; Lieut. BENJAMIN W. CARLSON, Denver.

Connecticut

To Camp Cody, Deming, N. M., base hospital, from Presidio, Capt. CHARLES H. SPRAGUE, Bridgeport.
To Camp Dodge, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. WILLIAM M. STAHL, Danbury.
To Camp Lee, Petersburg, Va., Veterinary Hospitals, from Hoboken, Capt. NELSON L. DEMING, Litchfield.
To Camp Sevier, Greenville, S. C., Aviation Sec., S. C., for duty, Capt. WILLIAM H. GRAY, Mystic.
To Fort Oglethorpe, for instruction, Lieut. JOHN G. SAGARINE, Hartford.

Delaware

To Camp Wheeler, Macon, Ga., for duty, from Camp Wheeler, Lieut. HERMAN S. MILLER, Wilmington.

District of Columbia

To Camp Cody, Deming, N. M., and to such other points as may be necessary to make special inspections, and on completion *to his proper station,* Capt. SCOTT D. BRECKENRIDGE, Washington.
To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. HENRY A. JOHNSON, Washington.
To Fort Riley, for instruction, from Fort Keogh, Capt. HARRY L. SCHURMEIER, Washington.

Florida

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Greene, Capt. HARRY A. PEYTON, Jacksonville; for duty, Lieut. EDGAR P. HOWELL, Micanopy.
To Camp Lewis, American Lake, Wash., base hospital, from Presidio, Capt. JAMES D. PASCO, Jacksonville.
To Fort Oglethorpe, as commanding officer, Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. THOMAS E. PARRISH, Dania; for instruction, Lieut. EDGAR W. NORTHCUTT, Fort Barancas; for instruction in tuberculosis examination, Lieut. HARVEY C. BYRD, Tribly.
To his home and honorably discharged, Lieut. ALPHOUS C. KOON, Jacksonville.

Georgia

To Camp Devens, Ayer, Mass., base hospital, from New York City, Capt. JOHN M. SIGMAN, Macon.
To Fort Oglethorpe, base hospital, from Fort Oglethorpe, Lieut. JOHN A. WHITE, Albany; for instruction, Lieuts. CLARENCE G. COX, Ellijay; PAUL F. LANE, Waycross; from duty as a private at Camp Wheeler, Lieut. LEONARD W. WILLIS, Bainbridge.
To Lakewood, N. J., for duty, Lieut. ORLANDO S. WOOD, Washington.

Idaho

To Fort Screven, Ga., as a member of board for examination of command for tuberculosis, and on completion *to Fort Moultrie, S. C.,* for the same duty, and on completion *to Fort Caswell, N. C.,* for the same duty, from Camp Wheeler, Lieut. CLYDE E. WATSON, Nampa.

Illinois

To Army Medical School, Washington, D. C., for instruction, Lieut. PATRICK J. GRIFFIN, Chicago.
To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Lieut. HERMAN C. SCHUMM, Chicago.
To Camp American University, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. BENJAMIN W. PROVOST, Peru.
To Camp Bowie, Fort Worth, Texas, base hospital, from Presidio, Lieut. THOMAS B. KELLY, Du Quoin.
To Camp Custer, Battle Creek, Mich., base hospital, from Chicago, Major SAMUEL C. PLUMMER, Chicago.
To Camp Dodge, Des Moines, Iowa, base hospital, Capt. C. PRESCOTT BENNETT, Washington; for orthopedic service at the camp and in the base hospital, Capt. FREDERICK C. TEST, Chicago.
To Camp Doniphan, Fort Sill, Okla., base hospital, Major STANTON A. FRIEDBERG, Chicago.
To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Lieut. CARL F. LEWIS, Jerseyville.
To Camp Hancock, Augusta, Ga., base hospital, from Chicago, Lieut. FRED L. GLASSOCK, Chicago.
To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieuts. IRVING PERRILL, FREDERICK J. RILEY, Chicago.
To Camp Lewis, American Lake, Wash., base hospital, from Presidio, Lieuts. IRA J. MAGEE, RALPH W. PETERSEN, Chicago.
To Camp Logan, Houston, Texas, as divisional psychiatrist, from Camp Logan, Lieut. THOMAS J. RIACH; Kankakee base hospital, from Camp Logan, Lieut. HARLEY A. ZINSER, Washington.
To Camp MacArthur, Waco, Texas, for temporary duty in conducting examinations in his specialty, Capt. MICHAEL L. GALLAGHER, Chicago. As divisional psychiatrist, from Camp MacArthur, Lieut. WILLIAM H. HOLMES, Chicago; base hospital, from Presidio, Lieut. RAYMOND E. HILLMER, La Grange.
To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. THOMAS R. MAXWELL, New Berlin.
To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. CECIL J. JOHNSTON, Canton.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Wadsworth, Lieut. MONROE ETHERTON, Carbondale.
To Camp Wheeler, Macon, Ga., base hospital, Capt. HARRY S. LESTER, Streator; from Camp Wheeler, Lieut. EDWARD BUCKMAN, Chicago; for duty, from Fort Oglethorpe, Lieut. EMORY S. HALL, McLeansboro.
To Fort Morgan, Ala., as a member of board for examination of command for tuberculosis, and on completion *to Fort Farrancas, Fla.,* for the same duty, and on completion *to Fort Dade, Fla.,* for the same duty, and on completion *to Key West Barracks, Fla.,* for the same duty, from Camp Wheeler, Lieut. EDWARD G. SEPPLE, Chicago.
To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 2, from Fort Oglethorpe, Lieuts. HARRY S. SEIWELL, Alton; GOTTLEIB A. LURIE, Chicago; GEORGE W. CUSICK, Chicago Heights; LAY G. BURROUGHS, Collensville.
To Fort Riley, for instruction, Lieuts. GEORGE A. CONREY, PETER G. KITTERMAN, STEPHEN F. KUBALA, JOHN W. O'SHEA, PAUL S. TRARLEY, Chicago; CHARLES A. ROBERTS, Durand; IRA D. KELSHEIMER, Paxton.
To New York City, for instruction in military roentgenology, Capt. ARTHUR R. METZ, Lieut. CHARLES L. MOIR, Chicago.
To Philadelphia, Pa., University of Pennsylvania, for instruction, Capt. FRANK W. BRODERICK, Sterling.
To San Antonio, Texas, Kelly Field, to make special examination of the command for tuberculosis, from Camp Travis, Lieut. SAMUEL M. MARCUS, Chicago.
To San Francisco, Calif., Aviation Section, Signal Corps, University of California, from Presidio, Lieut. FRANK A. STOCKDALE, Coal City.
To Washington, D. C., in the Enlisted Personnel Section, from Army Medical School, Lieut. HARRY T. SWANSON, Chicago.
To his home and to the inactive list, Major WILLIAM H. WILDER, Chicago.

To his home and honorably discharged, on account of being physically disqualified for active service, Capt. HENRY C. MACY, Chicago; Lieut. ROBERT G. BOND, Harrisburg.

To his home and honorably discharged, Lieut. VINCENT F. KELLER, Chicago.

Indiana

To Camp Bowie, Fort Worth, Texas, base hospital, from Presidio, Lieuts. JAMES B. SHOEMAKER, Miami; MICHAEL ROBINSON, Muncie.

To Camp Cody, Deming, N. M., base hospital, from St. Louis, Lieut. GEORGE W. BOWMAN, Indianapolis.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Capt. CHARLES E. COTTINGHAM, Indianapolis.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. BEN WEBSTER, Kingsbury; for duty, Lieut. EDWARD A. WEIR, Terre Haute.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. ORA L. McCOY, Romney.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieuts. ELDO H. CLAUSER, Muncie; MORRIS H. C. JOHNSON, Vincennes.

To Camp Taylor, Louisville, Ky., for duty, from Camp Taylor, Lieut. HERMAN W. SMELSER, Comersville.

To Fort Leavenworth, Kan., department laboratory, from Presidio, Lieut. NAPOLEON LaBONTE, Indianapolis.

To Fort Oglethorpe, for instruction, Capt. JAMES H. WALKER, Jeffersonville; Lieuts. RUSSELL A. GILMORE, Michigan City; JAMES F. HATFIELD, Walton; as commanding officer, Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. HARRY C. SHARP, West Baden.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Camp Logan, Lieut. WARREN D. CALVIN, Fort Wayne.

Iowa

To Camp Cody, Deming, N. M., base hospital, from Fort Riley, Lieut. FREDERICK H. LAMB, Davenport.

To Camp Doniphan, Fort Sill, Okla., for duty, from Fort Riley, Capt. ALBERT E. CONRAD, Decorah.

To Camp MacArthur, Waco, Texas, for duty, Capt. THOMAS L. LONG, Woodward.

To Dallas, Texas, Aviation School, Love Field, for duty, from Fort Riley, Capt. WILLIAM T. DALY, Cresco.

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 2, from Fort Oglethorpe, Capt. VALENTINE J. MEYER, Defiance.

To Fort Riley, for instruction, Lieut. ARTHUR L. DRUET, Larchwood.

To San Antonio, Texas, Kelly Field, for duty, Capt. ELMER R. PARK, Sioux City; Lieut. JESSE C. ROSS, Des Moines.

To his home and honorably discharged, Lieut. WILLIAM H. BETTS, Madrid; on account of being physically disqualified for active service, Lieut. DEAN W. HARMAN, Readlyn.

Kansas

To Fort Riley, for instruction, Lieuts. FRANK W. SHELTON, Independence; GEORGE W. MATTESON, Wichita.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Camp MacArthur, Lieut. THOMAS E. CRUMP, Parsons.

Kentucky

To Camp Devens, Ayer, Mass., base hospital, from New York City, Lieut. ASHTON M. BALDWIN, Louisville.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. SAMUEL E. STANLEY, Louisville.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. JOHN L. HAYDEN, Salem.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. MARION W. PAGE, Sedalia.

To Fort Oglethorpe, for duty, Lieut. HIRAM C. BEVINE, Thomas; for instruction, Lieut. WILLIAM M. COX, Corbin.

Louisiana

To Fort Oglethorpe, for instruction, Lieuts. WILLIAM E. REID, Glenmore; ISAAC N. ADAMS, Selma; from duty as a private at Camp Beauregard, Lieut. JOHN SIGNORELLI, New Orleans.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. HAROLD G. F. EDWARDS, Abeville.

To his home and honorably discharged, on account of being physically disqualified for active service, Lieut. WALTON L. BEAN, Andalusia.

To his home and to the inactive list, Lieut. PAUL B. LANDRY, Port Allen.

Maine

To Camp Lee, Petersburg, Va., as divisional psychiatrist, from Camp Lee, Lieut. DUDLEY C. KALLOCH, Portland.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. PRESTON W. WHITTAKER, Unitz.

To Camp Upton, L. I., N. Y., base hospital, Capt. HEDLEY V. TWEEDLE, Brakeport.

To his home and honorably discharged, Capt. EDWARD L. SOLLIMA, Portland.

Maryland

To Boston, Mass., for instruction, and on completion *to his proper station,* from Camp Dix, Lieut. HORACE B. TITLOW, Baltimore.

To Camp Bowie, Fort Worth, Texas, base hospital, from Army Medical School, Lieut. ROBERT S. CUNNINGHAM, Baltimore; from Fort Oglethorpe, Lieut. HOWARD L. WHEELER, Baltimore.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. HAVANNESS K. PELTEKIAN, Baltimore.

To Camp Lee, Petersburg, Va., base hospital, from Chicago, Lieut. WILLIAM R. GERAGHTY, Baltimore.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. WILLIAM S. TILLETT, Baltimore.

To Camp McClellan, Anniston, Ala., for duty, Lieut. JOSEPH E. GATELY, Baltimore.

To Camp Meade, Annapolis Junction, Md., for temporary duty, in conducting examinations in his specialty, Lieut. HARRY M. STEIN, Baltimore.

To Fort Oglethorpe, for instruction, Lieut. JOHN B. MAKIN, Baltimore.

To San Antonio, Texas, Kelly Field, to make special examination of the command for tuberculosis, from Camp Travis, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

To Washington, D. C., for duty, from Fort Myer, Lieut. IRA C. TYNDALL, Berlin; Gas Defense Service, American University, from Chickamauga Park, Lieut. JOSEPH W. KETZKY, Baltimore.

Massachusetts

To Boston, Mass., Harvard Medical School, for orthopedic instruction, Major ROBERT W. LOVETT, Boston. Northwestern Department, for temporary duty, and on completion *to his home* and to the inactive list of the Medical Reserve Corps, Major HAROLD C. ERNST, Boston. Coast defense of Boston, Capts. BENJAMIN W. GLEASON, Athol; HENRY W. ELIOT, Belchertown; Lieut. EUGENE M. DOLLOFF, East Lynn; Aviation Section, Signal Corps, for duty, Lieut. HAROLD L. BANCOCK, Boston; Harvard Medical School, Lieut. HARRIS R. POWERS, Boston.

To Camp Cody, Deming, N. M., base hospital, Lieut. WILLIAM H. MERRILL, Lawrence; from Presidio, Lieut. AIME N. FREGEAU, Fitchburg.

To Camp Devens, Ayer, Mass., base hospital, from Camp Wheeler, Lieut. EDMOND A. ROGERS, Boston; from New York City, Lieuts. OSCAR F. FOX, Jr., JAMES H. GETTINGS, Boston.

To Camp Joseph E. Johnston, Jacksonville, Fla., as member of board for examination of command for tuberculosis, from Camp Wheeler, Lieut. CHARLES E. PERRY, Haydenville; to examine the troops for mental and nervous diseases, from New York City, Lieut. JAMES A. GOULD, Westboro.

To Camp Kearny, Linda Vista, Calif., to examine the command in his specialty, from Presidio, Capt. SIDNEY M. BUNKER, Boston.

To Camp Meade, Annapolis Junction, Md., for duty, from New York City, Lieut. WILLARD W. LEMAIRE, Worcester.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. FRANKLIN A. STEVENS, Boston; from Army Medical School, Lieut. DAVID L. BELDING, Boston.

To Fort Oglethorpe, for conferring with the commandant thereof regarding the establishment of a course of training in military orthopedic surgery, and on completion *to his proper station,* Major ELLIOTT G. BRACKETT, Boston; Capt. ALEXANDER S. BEGG, Boston. For instruction, from Fort Banks, Capt. GEORGE H. BURKE, Springfield. As commanding officer, Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. WILLIAM T. RUMAGE, Boston. For instruction, Lieuts. ROBERT B. HUNT, Boston; WILLIAM R. BYRNE, Framingham; LOUIS D. BARNES, Lanesborough; FRANK W. A. MITCHELL, Lynn; WILLIAM K. TURNER, New Bedford; EDWIN E. SMITH, Quincy; HARRY R. COBURN, Tewkesbury; GEORGE T. LITTLE, Uxbridge; WHITMAN K. COFFIN, Westmedford; RICHARD M. ASH, West Quincy.

To Hoboken, N. J., veterinary hospital, from Fort Slocum, Capt. GORDON B. UNDERWOOD, Gardner.

To Washington, D. C., for instruction, and on completion *to Otisville, N. Y.,* in connection with the Medical Department of the Army, from Camp Devens, Major ARTHUR H. CROSBIE, Boston.

Michigan

To Camp Cody, Deming, N. M., base hospital, from Presidio, Lieut. ALLEN C. TIFFANY, Mackinaw.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. JOHN H. McEVAN, Detroit.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. VINCENT S. MANCUSO, Detroit.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. JOHN L. MEDDAUGH, Rollin.

To Fort Oglethorpe, for instruction, Capt. JOHN McCORMICK, Jackson. As commanding officer of Evacuation Ambulance Co. No. 4, from Fort Oglethorpe, Lieut. CLARENCE V. SMITH, Detroit.

To Fort Riley, for instruction, CHARLES D. COLLINS, Ironwood.

To Fort Screven, Ga., as a member of board for examination of command for tuberculosis, and on completion *to Fort Moultrie, S. C.,* for the same duty, and on completion *to Fort Caswell, N. C.,* for the same duty, from Camp Wheeler, Lieut. WILLIAM A. O'BRIEN, Detroit.

To San Antonio, Texas, Kelly Field, for duty, Lieuts. ANGUS P. SUTHERLAND, Detroit; CORNELIUS J. ADDISON, Grand Haven.

To his home and honorably discharged, Capt. SHELDON B. YOUNG, Caseville.

To his home and to the inactive list, Lieut. CHARLES F. KUHN, Detroit.

Minnesota

To Boston, Mass., Harvard Medical School, for instruction, Lieut. OTTO L. WINTER, St. Paul.

To Camp Cody, Deming, N. M., base hospital, from Presidio, Capt. JAMES D. WALKER, Wykoff.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. WILLIAM W. MOIR, Minneapolis.

To Fort Leavenworth, Kan., department laboratory, from Fort Snelling, Lieut. PAUL A. SCHULE, Fort Snelling.

To Fort Riley, base hospital, from Chicago, Capt. EARL H. MARCUM, Bennidgi; for instruction, Lieut. WALTER W. KAUTH, Minneiska.

To his home and honorably discharged, Lieut. ANTON G. SANDERSON, Minnesota.

Mississippi

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Vicksburg, Miss., Capt. JOHN S. EWING, Vicksburg; from Fort Oglethorpe, Lieut. BURRIS E. BURCHFIELD, Ruleville.

To Camp MacArthur, Waco, Texas, for duty, Capt. ZACHARIAH J. SCOTT, Winona.

To Fort Myer, Va., for duty, from Washington, D. C., Lieut. CHARLES E. LEHMBERG, Artesia.

To his home and honorably discharged, on account of being physically disqualified for active service, Lieut. WILLIAM S. CRANFORD, Laurel.

Missouri

To Albany, N. Y., for duty, from Camp Wheeler, Lieut. MARTIN H. POST, St. Louis.

To Army Medical School, Washington, D. C., for duty, Capt. DON R. JOSEPH, St. Louis.

To Camp Beauregard, Alexandria, La., base hospital, Capt. FAYETTE C. EWING, St. Louis.

To Camp Cody, Deming, N. M., base hospital, from Presidio, Lieut. ARTHUR J. SMITH, Booneville.

To Camp Custer, Battle Creek, Mich., base hospital, from Fort Riley, Lieut. BUELL F. MENEFEE, Montgomery.

To Camp Dodge, Des Moines, Iowa, base hospital, from Philadelphia, Lieut. ELLIOTT K. DIXON, St. Louis.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. CAMERON A. ROSE, Kansas City.

To Camp Shelby, Hattiesburg, Miss., Seventy-Sixth Field Artillery, from Fort Oglethorpe, Lieut. JOHN M. PERRY, Princeton.

To Fort Myer, Va., for duty, from Boston, Mass., Lieut. LEE H. WINEMILLER, Farley.

To Fort Riley, for instruction, Lieuts. LLOYD R. BONTWELL, Kirkwood; JOHN A. KONZELMAN, St. Louis.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. LUTHER H. WALLEN, Summerville.

To Philadelphia, Pa., University of Pennsylvania, Neurological School, from Boston, Lieut. CARL B. HUDSON, Montgomery City.

To St. Louis, Mo., Washington University, for instruction, from Camp Custer, Lieut. JAMES B. BIGGS, Bowling Green.

To Washington, D. C., for duty in the Enlisted Personnel Section, from Army Medical School, Lieut. CHARLES R. OZIAS, Kansas City.

To his home and honorably discharged, on account of being physically disqualified for active service, Lieuts. MOSES H. TOPPING, Flat River; ROY E. MYERS, Newtonia.

Montana

To Lakewood, N. J., for temporary duty, from Fort Oglethorpe, Lieut. THEODORE W. O'BRIEN, Butte.

To Fort Riley, for instruction, Lieut. WILLOUGHBY G. DYE, Great Falls.

Nebraska

To Camp Cody, Deming, N. M., base hospital, from Rockefeller Institute, Lieut. GEORGE W. EARLE, Oakdale.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. WILBER K. RILEY, Omaha.

To Fort Riley, base hospital, Lieut. CHARLES W. WAY, Wahoo; for instruction, Lieut. JAMES S. BELL, York.

Nevada

To his home and honorably discharged, Lieut. BARRETT D. RICE, Sparks.

New Hampshire

To Fort Oglethorpe, Convalescent Depot, from Fort Oglethorpe, Lieut. THERON H. HUCKINS, Tilton.

New Jersey

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Capts. ALFRED C. SHEPPARD, Bridgeton; GEORGE B. GALE, Newark; as member of board for examination of command for tuberculosis, from Camp Wheeler, Lieut. HARVEY M. EWING, Montclair.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. JOHN PELLARIN, West Hoboken.

To Camp Meade, Annapolis Junction, Md., base hospital, from New York City, Lieut. CHARLES P. LINGLE, Arlington.

To Camp Sevier, Greenville, S. C., base hospital, from Chicago, Lieut. STEPHEN T. QUINN, Elizabeth.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Chicago, Lieut. EDWIN H. RIGGINS, Orange.

To Fort Oglethorpe, for instruction, Capt. LEONARD F. HATCH, Vineland; Lieuts. CARNINE R. MARONE, Elizabeth; EARL A. GRIGGS, Haskell; JOHN A. BOTTI, Jersey City. As commanding officer, Convalescent Camp No. 1, from Fort Oglethorpe, Lieuts. WILLIAM H. SMITH, CHARLES N. HARPER, Trenton.

To Lakewood, N. J., for duty, from Hoboken, N. J., Lieut. CHARLES F. BECKER, Camden.

New Mexico

To Fort Crockett, Texas, as a member of board for examination of command for tuberculosis, and on completion *to Jackson Barracks, La.,* for duty, from Columbus, N. M., Lieut. ORIN J. WHITCOMB, Raton.

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 1, from Fort Oglethorpe, Capt. OLIVER RUGH HAYMAKER, Roswell.

To Fort Riley, for duty, from Camp Funston, Lieut. JAMES H. SANFORD, Socorro.

New York

To Army Medical School, Washington, D. C., for duty, from Fort Oglethorpe, Lieuts. HERBERT F. JACKSON, WALTER M. KRAUS, CHARLES H. NAMMACK, CHARLES PHILLIPS, New York City.

To Baltimore, Md., Gas Defense Service, for duty, from Camp Doniphan, Capt. FRANK G. YOUNG, New York City.

To Camp American University, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. LONEAR M. VINCENT, New York City.

To Camp Beauregard, Alexandria, La., for special sanitary inspection relating particularly to meningitis, and on completion *to his proper station,* from Camp Jackson, Major GEORGE DRAPPER, New York City.

To Camp Bowie, Fort Worth, Texas, base hospital, from Presidio, Lieuts. STEPHEN J. N. REED, Fultonville; HARRY C. SAUNDERS, New York City.

To Camp Devens, Ayer, Mass., Veterinary Hospital, from Fort Slocum, Lieut. ABRAHAM GINSBURG, New York City.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Upton, Capt. HENRY C. DREW, Brooklyn.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. HARRY GOLDMAN, Long Island City.

To Camp Greene, Charlotte, N. C., for temporary duty, Capt. CHARLES H. BALDWIN, Utica. Base hospital, from Army Medical School, Lieut. NOLAN E. LEAKE, New York City.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. ANTONY J. GRACE, Batavia.

To Camp Joseph E. Johnston, Jacksonville, Fla., as a member of board for examination of command for tuberculosis, from Camp Wheeler, Capt. FRANK McLEAN, New York City. For duty from Fort Oglethorpe, Lieut. EDWIN C. GILBERT, Bridgehampton. To examine the troops for mental and nervous diseases, from Washington, D. C., Lieut. ROBERT BOGAN, Brooklyn.

To Camp Lee, Petersburg, Va., Veterinary Hospitals, from Hoboken, Lieut. PETER J. BARONE, Buffalo.

To Camp Lewis, American Lake, Wash., base hospital, from Presidio, Lieuts. MARTIN J. COONSY, Brooklyn; ANTHONY W. M. MARINE, Brooklyn.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. HALL G. VAN VLACK, Forestville.

To Camp Meade, Annapolis Jct., Md., base hospital, from New York City, Lieut. HARRY R. ROERSTER, New York City.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. ROBERT W. PETTIT, New York City.

To Camp Sevier, Greenville, S. C., for duty, Capt. RALPH GRACE, New York City.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. LEE B. MATHEWS, Brooklyn.

To Camp Taylor, Louisville, Ky., for duty, from Camp Sherman, Lieut. PERRY J. MANHEIMS, New York City.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Wheeler, Capts. EDWIN L. DRAPER, CLINTON B. HAWN, Albany.

To Fort McPherson, Ga., for duty, Capt. WILLIAM L. McFARLAND, New York City.

To Fort Morgan, Ala., as a member of board for examination of command for tuberculosis, and upon completion *to Fort Barrancas, Fla.,* for the same duty, and on completion *to Fort Dade, Fla.,* for the same duty, from Camp Wheeler, Capt. STANMORE L. CASH, New York City; Lieut. MAXWELL K. WILLOUGHBY, Auburn.

To Fort Oglethorpe, for instruction, Capts. MILEY B. WESSON, Delmar; JEREMIAH A. ALLIS, New York City; Lieuts. SEYMOUR G. CLARK, JOSEPH D. ROSENTHAL, EDWARD A. SALTZMAN, Brooklyn; CHARLES J. BRONE, JULIUS Y. COHEN, FRANK G. WALZ, Buffalo; EPHRAIM M. BLUESTONE, FREDERICK CHRISTOPHER, JULIUS BINOUS, WILLIAM BUTLER RYAN, JR., CLARENCE S. TOSHACH, New York City. As commanding officer of Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. WILLIAM W. CARLETON, Waterloo. Base hospital, from Fort Oglethorpe, Lieut. BREWSTER C. DOUST, Syracuse.

To Fort Riley, for instruction, Lieut. DAVID M. HATANSON, New York City.

To Fort Screven, Ga., as a member of board for examination of command for tuberculosis, and on completion *to Fort Moultrie, S. C.,* for the same duty, and on complethion *to Fort Caswell, N. C.,* for the same duty, from Camp Wheeler, Capt. JOSEPH O. O'BRIEN, Albany.

To Lakewood, N. J., for duty, from Hoboken, N. J., Lieut. WILLIAM J. ORDWAY, New York City.

To Newport News, for duty, from Fort Oglethorpe, Lieut. HENDRIK VAN R. STAM, New York City.

To New York City, for duty, from Rockefeller Institute, Capt. JAMES F. NAGLE, New York City; for instruction in orthopedic surgery, from Allentown, Lieut. ROBERT E. O'ROURKE, New York City.

To San Antonio, Texas, Kelly Field, to examine command for tuberculosis, from Camp Travis, Lieut. PATRICK J. HIRST, Middle Grove.

To Washington, D. C., for consultation with the Surgeon-General of the Army, and on completion *to his proper station,* Major LINSLEY R. WILLIAMS, Albany; for duty in the Surgeon-General's Office, Majors HAVEN EMERSON, JOHN C. A. GERSTER, New York City; for duty, from Hoboken, Capt. FRED M. MEADER, New York City.

To the inactive list, Major EDWARD R. DENCH, New York City; Capt. NELSON K. FROMM, Albany.

Honorably discharged on account of being physically disqualified for active service, Capt. MALCOLM E. HOUSE, Cuba; Lieut. GEORGE R. STEVENSON, Penn Yan.

North Carolina

To Camp Meade, Annapolis Jct., Md., base hospital, from New York City, Lieut. JOSEPH W. HOOPER, Wilmington.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. WILBUR G. JENKINS, Raleigh.

To Fort Oglethorpe, Third Division Trains, from Fort Oglethorpe, Lieut. RALPH S. STEVENS, Raleigh.

To Newport News, Va., for examination of command for tuberculosis, from Army Medical School, Capt. THOMPSON FRAZER, Asheville.

To New York City, for instruction, and on completion *to Fort Oglethorpe,* for instruction, Major MARSHALL H. FLETCHER, Asheville.

To Rockefeller Institute, N. Y., for instruction in laboratory work, Lieut. MILTON T. BARGERTON, JR., Oak Ridge.

Ohio

To Camp Beauregard, Alexandria, La., base hospital, from Chicago, Lieut. SAMUEL ZIELONKA, Cincinnati.

To Camp Bowie, Fort Worth, Texas, base hospital, from Presidio, Lieut. PAUL A. MURR, Galion.

To Camp Kearny, Linda Vista, Calif., base hospital, from Presidio, Lieut. EDWARD McD. CASS, Utica.

To Camp Lee, Petersburg, Va., base hospital, from Fort Oglethorpe, Lieut. HAROLD K. MOUSER, Marion.

To Camp Lewis, American Lake, Wash., base hospital, from Presidio, Lieuts. CHARLES G. LAROCCO, Cleveland; CHARLES F. MORRIS, Youngstown.

To Camp MacArthur, Waco, Texas, for duty, Capt. JOHN C. MILLER, Payne; base hospital, from Presidio, Lieut. DAVID A. TUCKER, JR., Cincinnati.

To Camp Meade, Annapolis Jct., Md., base hospital, from New York City, Lieut. WILLIAM N. TAYLOR, Columbus.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. RUSSELL E. LIGHTNER, Kingston.

To Camp Sevier, Greenville, S. C., for duty, Capt. JOSEPH A. LINK, Springfield.

To Camp Sherman, Chillicothe, Ohio, for duty, from Army Medical School, Lieut. CHARLES A. STAMMEL, JR., Cincinnati.

To Camp Taylor, Louisville, Ky., base hospital, from Chicago, Capt. CHARLES N. PAUL, Lieut. CHARLES E. KIELY, Cincinnati.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Army Medical School, Lieut. CLAUDE D. HAMILTON, Canton.

To Fairfield, Ohio, Wilbur Wright Field, for duty, from Fort Oglethorpe, Lieut. WILLOUGHBY D. BISHOP, Hollansburg.

To Fort Des Moines, Ia., for duty, from Camp Dodge, Lieut. JOSEPH M. ULRICH, Akron.

To Fort Oglethorpe, for instruction, Lieuts. LEROY B. SHERRY, Cleveland; HAROLD K. FRUTH, Fosteria; JOHN G. MARTIN, New Concord.

To Newport News, Va., for duty from Fort Oglethorpe, Lieut. CHARLES J. ROACH, Zanesville.

To San Antonio, Texas, Kelly Field, for duty, Lieut. WALTER H. HATFIELD, Cincinnati.

Oklahoma

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Fort Riley, Lieut. SIMS D. BEVILL, Poteau.

To Camp Logan, Houston, Texas, base hospital, from Chicago, Lieut. FRED L. PATTERSON, Fargo.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Army Medical School, Lieut. THOMAS A. HARTGRAVES, Soper.

To Fort Oglethorpe, to organize and command Hospital Train No. 34, from Fort Oglethorpe, Lieut. WILLIAM G. BAIRD, Oak Hill.

To Fort Riley, for instruction, Lieuts. WILLIAM B. HARNED, Chattanooga; GARNETT A. KILPATRICK, Wilburton.

To Fort Sill, Okla., for duty, Lieuts. ESTER L. JONES, Ingersoll; DANIEL W. HUMPHREYS, Owasso.

To Presidio, San Francisco, Calif., for duty, from Presidio, Lieut. DAVID A. GREGORY, Ardmore.

To San Antonio, Texas, Kelly Field, for duty, Lieuts. ORANGE W. STARR, Drumwright; LISBY L. WADE, Ryan.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Camp Beauregard, Lieut. CLAUDE E. PUTNAM, Eakly.

To his home and honorably discharged, Lieut. JOSEPH P. POWELL, Vici.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, from Presidio, Lieut. FRANK E. SMITH, Portland.

To Portland, Ore., Spruce Production Division, Aviation Section, Signal Corps, for duty, Lieut. ELMER E. ANDERSON, Portland.

Pennsylvania

To Camp Bowie, Fort Worth, Texas, base hospital, from Chicago, Lieut. THOMAS P. MARTIN, Mayfield.

To Camp Cody, Deming, N. M., as Divisional Psychiatrist, from Camp Cody, Capt. HORACE PHILLIPS, Philadelphia. Base hospital, from Presidio, Lieut. JOHN D. PERKINS, JR., Philadelphia.

To Camp Devens, Ayer, Mass., base hospital, from New York City, Lieut. JACOB R. BROBST, Bloomsburg.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Chicago, Lieut. DENNIS R. MURDOCK, Greensburg.

To Camp Hancock, Augusta, Ga., base hospital, on completion of course at Presbyterian Hospital, Chicago, Lieut. ERNEST E. DOWNTON, Starruca.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieuts. HARRY J. STOCKBERGER, Claridge; WILLIAM E. ANDREW, Pen Argyle; WALTER B. RILE, Philadelphia.

To Camp Lee, Petersburg, Va., base hospital, from Chicago, Capt. LOUIS J. C. BAILEY, Greensburg; on completion of course at Neurological School, Presbyterian Hospital, Chicago, Capt. DAVID O. THOMAS, New Kensington. Veterinary Hospitals, from Hoboken, Capt. WILLIAM J. MONAGHAN, Girardville.

To Camp MacArthur, Waco, Texas, base hospital, from Chicago, Lieut. WILLIAM J. POTTS, Greensburg.

To Camp Meade, Annapolis Jct., Md., base hospital, from New York City, Capt. WARREN WALKER, Philadelphia; Lieut. DAVID S. GRIM, Reading; for duty, from New York City, Lieut. HARRY T. STOCKTON, Marcus Hook.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. EARLE McC. McLEAN, Eldred.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Camp Gorden, Lieut. WILLIAM B. SKELTON, Meadville.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Gordon, Lieut. LAWRENCE C. MOORE, Chatham; from Camp Wheeler, Lieut. JACOB J. RUTBERG, Philadelphia.

To Fairfield, Ohio, Wilbur Wright Field, for duty, from Fort Oglethorpe, Lieut. HERBERT COOPER, Philadelphia.

To Fort McPherson, Ga., for duty, Capt. HARRY C. WESTERVELT, Pittsburgh.

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 2, from Fort Oglethorpe, Lieut. PHILIP L. HATCH, Coudersport. For instruction, Lieuts. CHARLES O. W. BARTINE, Germantown, Philadelphia; LOUIS J. GOLDBLATT, McKeesport; MAURICE T. SLOANE, Mont Alto; CLAUDE L. BRADFORD, HOWARD S. MYERS, Pittsburgh; JAMES G. MATTERNES, Sinking Spring; WILLIAM W. WOODWARD, West Chester; from Philadelphia, Lieut. SETH A. BRUMM, Philadelphia.

To Fort Porter, N. Y., for duty, Capt. WILLIAM T. VAN PELT, Philadelphia.

To Hoboken, N. J., for temporary duty, from New York City, Capt. Capt. JOHN F. McCLOSKEY, Philadelphia.

To Lakewood, N. J., for duty, from Hoboken, Major JACK C. GITTINGS, Philadelphia; from Fort Oglethorpe, Lieut. CARLOS P. HOLCOMB, Athens.

To Newport News, Va., for duty, Capt. WILLIAM S. RUCH, Carlisle.

To New York City, for instruction in military roentgenology, from Camp Shelby, Lieut. CHARLES H. KIRK, Homer City.

To Philadelphia, Pa., for temporary duty, and on completion *to Fort Oglethorpe,* for instruction, Lieut. CHARLES FRANCIS MACKEL, Philadelphia.

To Richmond, Norfolk, Va., Charleston, Columbia, S. C., Savannah, Atlanta, Ga., Montgomery, Birmingham, Ala., Meridian, Miss., New Orleans, La., Jackson, Miss., Shreveport, La., Hot Springs, Little Rock, Ark., Huntington, Parkersburg, Wheeling, W. Va., for duty in connection with the Medical Department of the Army, and on completion *to his proper station,* Major HENRY D. JUMP, Philadelphia.

Honorably discharged, Lieut. SAMUEL McCLARY, 3rd, Philadelphia.

To his home and honorably discharged from the Medical Reserve Corps, on account of being physically disqualified for active service, Lieut. SAMUEL A. LEINBACH, Quakertown.

South Carolina

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 2, from Fort Oglethorpe, Lieut. JULIUS D. EADDY, Lake City.

South Dakota

To Camp McClellan, Anniston, Ala., base hospital, from Army Medical School, Lieut. GUSTAV A. LANDMANN, Scotland.

To Fort Oglethorpe, for instruction, Lieut. E. C. SOLDIRD, Stapleton.

To Fort Riley, for instruction, Lieuts. ALEXANDER O. FRASER, Belle Fourche; ROBERT J. QUINN, Burke.

Tennessee

To Camp Devens, Ayer, Mass., base hospital, from New York City, Lieut. BENJAMIN C. ARNOLD, Jackson.

To Camp Joseph E. Johnston, Jacksonville, Fla., to examine the troops for mental and nervous diseases, from New York City, Lieut. GEORGE A. HATCHER, Nashville.

To Camp MacArthur, Waco, Texas, base hospital, Lieut. G. MALCOLM HALL, Lenoir City.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Capt. BERNARD C. McMAHON, Memphis.

To Fort Oglethorpe, as commanding officer Evacuation Ambulance Co., No. 3, from Fort Oglethorpe, Lieut. CHARLES C. KING, Memphis. For instruction, Lieut. ALBERT B. KINSMORE, Chattanooga.

Texas

To Camp MacArthur, Waco, Texas, for duty, Capt. FRANK D. SHEPHERD, Byers; Lieuts. WIRT D. FOWLER, Liberty Hall; EDWARD J. BURNETT, San Antonio.

To Fort Logan H. Roots, Ark., for duty, from Army Medical School, Capt. EDWARD F. COOKE, Houston.

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. WALLACE B. GUINN, Tivoli. For instruction, Lieut. WILLIAM J. McCREIGHT, Anson.

To Fort Riley, for instruction, Lieut. WALTER L. JACKSON, Dallas.

To Lakewood, N. J., for temporary duty, from Fort Oglethorpe, Lieut. HARRIS D. WHITTINGTON, Eastland.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. JOHN E. QUAY, Waco.

To San Antonio, Texas, Kelly Field, to make special examination of the command for tuberculosis, from Camp Travis, Capt. CHARLES McC. HENDRICKS, El Paso. Aviation Section Signal Corps, Kelly

Field, for duty, Lieuts. JOHN M. HOOPER, Archer City; CHARLES B. JONES, Quanah.

To Washington, D. C., for duty, from New York City, Lieut. QUINCY B. LEE, Wichita Falls.

Honorably discharged, Lieut. PAUL GALLAGHER, El Paso.

Utah

To Fort Riley, for instruction, Lieut. JAMES M. GRAHAM, Fruita.

Vermont

To Camp Shelby, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. DENNIS J. SHEEHAN, Lyndonville.

Virginia

To Fort Oglethorpe, as commanding officer of Convalescent Camp No. 1, from Fort Oglethorpe, Lieut. JAMES L. HAMNER, Ammon.

For instruction, Lieuts. WILLIAM H. RENINE, Clinchburg; STEPHEN R. DONEHOE, Jr., Norfolk; RAYMOND C. HOOKER, ROBERT E. WHITEHEAD, Richmond; JOHN C. BOYD, Roanoke; THOMAS H. MASSEY, Warm Springs.

To Philadelphia, Pa., University of Pennsylvania, for instruction, from Camp Greene, Major LOMAX GWATHMEY, Norfolk.

To his home and honorably discharged, Capt. STANLEY H. GRAVES, Norfolk.

Washington

To Camp Lewis, American Lake, Wash., as divisional psychiatrist, from Camp Lewis, Capt. ROBERT P. SMITH, Seattle. For duty, Lieuts. WILLIAM G. PARKER, Cashmere; WILLIAM A. MONROE, ROY A. MOREE, Tacoma.

To Fort Mason, Calif., for duty, from Presidio, Capt. ALBERT LESSING, Seattle.

To Fort Oglethorpe, for duty with the convalescent depot, from Fort Oglethorpe, Lieut. ARTHUR R. GOULD, Kent.

To Fort Riley, base hospital, from Chicago, Lieut. GEORGE W. SWIFT, Seattle.

To Houston, Texas, Ellington Field, for duty, from Lake Charles, La., Capt. ROBERT A. ALLEN, Tacoma.

To his home and honorably discharged, Lieut. ERNEST L. WOODRUFF, Seattle.

West Virginia

To Camp Lewis, American Lake, Wash., base hospital, from Presidio, Lieut. CHARLES G. WILLIAM, Kingston.

To Camp McClellan, Anniston, Ala., for duty, Lieuts. STANLEY W. BARBER, Carperton; JOHN B. CORBIN, Wolf Summit.

To Canal Zone, for assignment to duty, from Fort Oglethorpe, Lieut. ESLEY T. LAKE, Nuss.

To Fort Oglethorpe, for instruction, Lieuts. WILLIAM H. TRIPLETT, Matowan; LATIMER P. JONES, Pennsboro.

To Los Angeles, Calif., Aviation Section, Signal Corps, from San Francisco, Lieut. HARRY R. PARKER, Williamson.

To Newport News, Va., for duty, Lieuts. HENRY G. HAMMOND, Ackman; RAYMOND L. FOCER, Collins; HOWARD E. SUMMERS, Huntington; ALEXANDER H. S. ROUSE, Kabletown; DAVID AYSHIRE, Madison; ROBERT W. SAYRE, New Haven; ISRAEL LEVERDORF, Weirton; RUSSELL A. SALTON, Williamson.

Wisconsin

To Camp Custer, Battle Creek, Mich., base hospital, Capt. ALBERT A. MAURER, La Crosse.

To Camp Grant, Rockford, Ill., from Camp Bowie, Lieut. FRANK O. BRUNCKHORST, Kewanee; from New York City, Lieut. ELIAS BIBBY, Milwaukee.

To Camp Joseph B. Johnston, Jacksonville, Fla., to examine the troops for mental and nervous diseases, from New York City, Lieut. WILLIAM J. FLEMING, Wauwatosa.

To Camp MacArthur, Waco, Texas, base hospital, from Presidio, Lieut. IVAN B. PIPPAN, Excelsior.

To Camp Pike, Little Rock, Ark., base hospital, from Presidio, Lieut. WILMOT P. MILLER, Milwaukee.

To Camp Sheridan, Montgomery, Ala., base hospital, from Army Medical School, Lieut. RALPH T. GILCHRIST, Milwaukee.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Lieut. FOREST C. KRAMER, Milwaukee.

To Fort Riley, for instruction, Capt. RODERIC S. ELLIOTT, Milwaukee; Lieut. WILILAM J. THOMSON, Portage.

To Lexington, Ky., to observe the treatment of trachoma, and on completion *to his proper station*, Major NELSON M. BLACK, Milwaukee.

To San Antonio, Texas, Kelly Field, for duty, Lieut. GEORGE W. HARRISON, Ashland.

Honorably discharged, Lieut. DELPARDE W. ROBERTS, Milwaukee.

Wyoming

To Metuchen, N. J., to make sanitary inspection of the Raritan River Ordnance Depot, and on completion *to his proper station*, from Hoboken, Major FREDERICK J. PEIRCE, Cheyenne.

Honorably discharged, Lieut. FREDERICK W. PHIFER, Wheatland.

CORRECTIONS

Under "Orders to Officers of the Medical Reserve Corps":

Issue of Nov. 3, 1917: *To Philadelphia*, for duty, Major CHARLES F. NASSAU, Philadelphia, instead of Major CHARLES F. HASSAN.

Issue of Dec. 22, 1917: *To Camp Funston*, Fort Riley, Kan., as member of board for examination of command for tuberculosis, from Fort Worth, Lieut. SAMUEL R. JOHNSON of St. Charles, Mo., instead of SAMUEL E. JOHNSON of Clanton, Ala.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Frazier Cloyd, Westville, has been appointed local surgeon of the Illinois Traction System, succeeding Dr. Melvin L. Hole, Danville, resigned, to enter military service, and on duty at Fort Riley, Kan.

Chicago

Italian Doctor Honored.—January 6, the Italian colony of Chicago did honor to Dr. Giovanni B. Bruno, who is now on the Italian front, by giving a dance and bazaar for the Red Cross Ambulance Fund.

Personal.—Dr. Edwin Oakes Jordan, head of the department of bacteriology of the University of Chicago, returned, January 12, from Fort Sill, Okla., where he has been making a study of epidemic cerebrospinal meningitis.——Health Commissioner Robertson has been elected president of the board of directors of the Municipal Tuberculosis Sanatorium, to fill the vacancy caused by the resignation of Dr. Charles P. Caldwell.——Dr. Marcus S. Oliver is under treatment in the Michael Reese Hospital, on account of a skull fracture sustained in a collision between automobiles, January 9.

Base Hospital Officers Honored.—A military banquet was given by the Physicians' Club of Chicago, January 15, at the Auditorium in honor of Major L. McArthur, medical director of Base Hospital Unit No. 14; Major Dean D. Lewis, medical director of Base Hospital Unit No. 13, and Major Nelson M. Percy, medical director of Base Hospital No. 11. Major McArthur responded on behalf of the Base Hospital Unit; Col. Henry I. Raymond, M. C., U. S. Army, department surgeon, Central Department, spoke on behalf of the Medical Corps of the Army; Col. J. S. Dennis, commanding the British Recruiting Mission, told of his work in France and England during the war, and Mr. Marquis Eaton, chairman of the Chicago Chapter of the American Red Cross, discussed some phases of Red Cross work.

INDIANA

Sentenced for Violating Harrison Law.—Dr. Henry I. Berger, Indianapolis, was sentenced to serve a year and a day in the federal penitentiary at Atlanta for violating the Harrison Narcotic Law.

New Officers.—At the annual meeting of the Tippecanoe County Medical Society at Lafayette, Dr. Charles C. Driscol was elected president; Dr. Furman L. Pyke, vice president; Dr. Harry J. Laws, secretary, and Dr. Charles Hupe, treasurer.

New Management for Hospital.—Hope Hospital, Fort Wayne, has changed hands. The board of directors which has conducted the institution for some time voted, January 7, temporarily to sustain activities. Dr. Albert H. McBeth has taken charge of the hospital, which will be continued as a general hospital.

Smallpox in Indianapolis.—Fifty new cases of smallpox have been reported since January 1, in Indianapolis. Dr. H. G. Morgan, secretary of the board of health, has been instructed to prepare an ordinance empowering the board authority to quarantine districts where there are epidemics of smallpox. The plan of the board contemplates permitting vaccinated persons to pass in and out of quarantined districts.

New Officers for State Examining Board.—At the annual meeting of the State Board of Medical Examiners at the State House, Indianapolis, it was decided that no examination for license to practice medicine in Indiana will be given in any other language than English. It has been the custom to give the examinations in any language that the applicant wished. The following officers were elected: Dr. James M. Dinnen, Fort Wayne, president; Dr. A. B. Caine, Marion, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Moses S. Canfield, Frankfort, treasurer.

Personal.—Major David C. Peyton, superintendent of the Indiana Reformatory, Jeffersonville, spoke before the Transportation Club, Louisville, January 8, on "Crime as a Social Problem."——Dr. Lawrence R. Miller, Winslow, was severely burned by the explosion of a coal oil stove in his office.——

Dr. Frank C. Hershey, Carmel, has been elected county health officer for a term of four years.——Dr. Frank H. Green, Rushville, has been appointed deputy coroner of Rush County, succeeding Dr. Lowell M. Green, who is in the military service.——The office of Dr. Carl B. McCord, Vedersburg, was damaged by a fire which destroyed the Burgner Building, December 28.——Dr. Clifford H. King, Wabash, fractured his right arm, December 26, while cranking his automobile.——Dr. Grace Line Homman, Laporte, has received an appointment at the Mayo Hospital, Rochester, Minn.

MAINE

Personal.—The offices of Drs. George R. Campbell and Marcus P. Hambleton, Augusta, were destroyed by fire, January 4.

New Officers.—York County Medical Society, ninety-first quarterly meeting, held in Biddeford, January 3: president, Dr. Clarence F. Kendall, Biddeford; vice president, Dr. Ansel S. Davis, Springvale; secretary, Dr. A. Leon Jones, Old Orchard, and treasurer, Dr. Charles F. Traynor, Biddeford. ——Kennebec County Medical Society, held in Augusta, December 27: president, Dr. Edward W. Boyer, Waterville; vice president, Dr. Forrest C. Tyson, Augusta; secretary, Dr. Sylvester J. Beach, Augusta, and treasurer, Stephen A. Bosworth. Resolutions were adopted to remit the dues of all members of the association on duty in the Medical Reserve Corps.

Health Organization Changes.—To increase the effectiveness of the state health service, in accordance with the new state health law, a reorganization of the service has been effected. According to the bulletin of the state department, the state has been divided into three health districts, each under the supervision of a full time officer who represents the health commissioner in one particular section of the state. This, it is hoped, will bring the headquarters of the state department into more intimate relationship with health problems. The three districts comprise counties in the northern, southeastern and southwestern districts. The organization further embraces five divisions or branches of work: communicable diseases, under the supervision of Dr. Albion G. Young, Augusta; sanitary engineering, directed by Prof. H. D. Evans; laboratories, directed by Dr. Herbert E. Thompson, Bangor; vital statistics, directed by Miss Inez Creighton, and public health education, in charge of Mr. William H. Greenleaf. Dr. Leverett D. Bristol, Augusta, is state commissioner of health.

MARYLAND

Enlarged Hospital Opened.—The three new wards and eighteen private rooms in the Maryland General Hospital which comprise the $30,000 improvements to the institution have been opened to the public. The improvements were made with a part of the $200,000 obtained by popular subscription during the early months of last year. The additions will permit the hospital to care for about eighty more patients. The men's ward will accommodate about thirty patients, the women's ward a like number, and the children's ward about twenty.

Campaign for Blind.—A campaign to raise $100,000 for the Maryland Workshop for the Blind was started, January 14, in Baltimore, to take care of the increased number of blind and the blind soldiers returned from the front. With a waiting list of more than 100 blind persons eager to secure employment at the workshop, and this list on the verge of being augmented by blinded soldiers, the buildings will have to be remodeled to accommodate the newcomers. Besides, the workshop will have to be equipped with new machinery and other facilities, all of which will require a large amount of money. The campaign will be actively carried on during the remainder of the week.

Increase in Tuberculosis.—An increase in tuberculosis durnig the past year is reported by the health department, which has more than 4,000 patients now in its care. There were 1,694 new cases in 1915, 1,830 in 1916, and 2,211 last year, according to records of the department. The increase in the disease is due largely to the negro population, and the department is practically helpless, so far as hospital facilities are concerned. Measures for relief will have to be taken by the city, if the disease is to be checked.——Interesting comparative statistics have been issued by James Jenkins, Jr., executive secretary of the Maryland Association for the Prevention and Relief of Tuberculosis, regarding the death rate per thousand from consumption in the different large cities of the country. In this analysis Baltimore ranks highest, with a death rate of 1.90, Philadelphia following with 1.71, New York with 1.55, Boston with 1.45, Buffalo with 1.43 and Chicago with 1.33.

Personal.—Dr. Robert W. Johnson, Jr., who is now in Oxford, England, is assisting with the reconstruction work among the wounded soldiers at the hospital there.——Dr. William S. Thayer, Baltimore, of the Johns Hopkins Medical School, has returned to the United States after four months in Russia, as a member of a mission sent by the American Red Cross.——Dr. William M. Dabney, Ruxton, has arrived in Bordeaux, France, and has taken up his duties of diagnostician of tuberculosis. Dr. Dabney has been sent to France by the Rockefeller Foundation.——Major Arthur M. Shipley, Baltimore, M. R. C., U. S. Army, who until recently was physician-in-chief at the base hospital at Camp Meade, has been ordered to Fort Oglethorpe, Ga., and expects to leave there within a few days for France.——Dr. Chester P. Woodward, Baltimore, has been named by Health Commissioner Blake as secretary to the health department, to succeed Dr. Austin H. Wood, Baltimore, recently commissioned first lieutenant in the Medical Reserve Corps.

Appointments to Institute of Hygiene and Public Health.—Two important appointments to the staff of the Institute of Hygiene and Public Health, to be opened in Baltimore in in October under the direction of Dr. William H. Welch, have been announced by Dr. Welch. Dr. Carrol G. Bull of the Rockefeller Institute in New York, who is now in France demonstrating with the French armies his newly discovered cure for gangrene, has been named as associate professor of immunology and serology. Dr. Raymond Pearl, biologist of the Maine Agricultural Experiment Station, now in charge of the statistical work for the National Food Administration, has been named to take charge of the department of biometry and vital statistics. The appointments bring the staff of leading scientists for the institute now up to five. Dr. Welch was named director immediately after the announcement by the Rockefeller Foundation that the institute was to be established in connection with the Johns Hopkins University. Dr. William H. Howell, now professor of physiology at Johns Hopkins, has been appointed professor of physiologic hygiene, and Dr. William W. Ford, Baltimore, bacteriologist at Johns Hopkins, has been made associate professor of bacteriology.

MISSOURI

Tree Planting at State Hospital.—Dr. Jesse L. Eaton, superintendent of State Hospital No. 4, Farmington, has inaugurated a tree planting movement which he proposes to make an annual custom at the institution. Hard maple and other trees will be planted by the landscape gardener.

State Board Election.—At the annual meeting of the state board of health, January 8, Dr. Wilson J. Ferguson, Sedalia, was reelected president; Dr. William A. Clark, Jefferson City, was elected vice president, to succeed Dr. T. Hurley Wilcoxen, Bowling Green, and Dr. George H. Jones, Kansas City, was reelected secretary.

Society Dedicates Service Flag.—At the monthly meeting of the Jackson County Medical Society, held in Kansas City, December 11, a service flag 10 by 15 feet, and bearing 151 stars, was dedicated. A gold star is to be added to the flag in honor of Dr. William T. Fitzsimons, the first physician from the United States to lose his life in the military service of his country in France.

Personal.—The State Prison Board has appointed Dr. Simon McNearvey, Florissant, to succeed Dr. James C. Welch, Salem, as physician to the state prison, Jefferson City.——Drs. Wade H. Miller and Walter C. Klein have been made members of the Kansas City Emergency Staff, succeeding Drs. Fred E. Dardatz and George F. Cooper, who have resigned to enter military service.——Dr. R. J. Terry, professor of anatomy, Washington University Medical School, St. Louis, suffered a fracture of the patella several weeks ago when he slipped and fell while running to catch a street car. He has improved rapidly, and is expected to be well within about two weeks.——Capt. John G. Hayden, M. R. C., Kansas City, has been desperately ill with pneumonia for some time, having been stricken while taking a course in neurologic surgery at the University of Pennsylvania. Recent reports of his condition state that he is out of danger.——Dr. C. W. Swope, formerly of Wichita, Kan., has become an associate with Dr. E. H. Skinner of Kansas City in the practice of roentgenology.——Capt. Robert E. Schlueter, president of the Missouri State Medical Association, has been ordered to Fort Oglethorpe, Ga., for active service. The first three vice presi-

dents are holding commissions in the service and therefore Dr. Schlueter has appointed Dr. W. A. Clark of Jefferson City to act as president during his absence.——Governor Gardner has issued a drastic order to all state institutions and appointive officer to practice the strictest economy in the conduct of their institutions during 1918 and under no pretext to incur deficiencies. He says he will veto any bill appropriating money for such deficiencies.

St. Louis

Diphtheria.—Dr. Martin C. Woodruff, chief diagnostician of the state health department of St. Louis, announced that diphtheria is developing in the city at the rate of 150 cases a week, and there are now 450 cases on record in the city.

Service Flag Dedicated.—At the annual meeting of the St. Louis Medical Society, January 5, the service flag of the society, bearing 110 stars, or approximately one seventh of the total active membership, was dedicated with appropriate exercises.

Army Night at Society.—At a meeting of the St. Louis Medical Society, January 12, Col. Joseph T. Clarke, M. C., U. S. Army, delivered an address on "What a Medical Reserve Officer May Expect in the Army," and Capt. Robert J. Lynch, M. R. C., spoke on "Organization of Special Army Schools." The discussion was opened by Col. Thomas U. Raymond, M. C., U. S. Army.

MONTANA

Hospital Notes.—An auxiliary city contagious disease hospital has been established in Great Falls. The institution will accommodate from twenty-five to thirty patients.——The first unit of the Butte Deaconess Hospital is nearing completion, and will be ready to receive patients by March. The building is two stories in height with a basement, will accommodate forty patients, and will have cost, when completed, about $40,000.

Election of Officers.—Cascade County Medical Society, at Great Falls, December 19: president, Dr. Charles I. Titus; vice president, Dr. Francis E. Keenan, and secretary-treasurer, Dr. Charles F. Coter, all of Great Falls.——Western Montana Medical Association, at Missoula, December 27: president, Dr. Edward W. Spottswood; vice president, Dr. Edwin H. Freeze, and secretary, Dr. James D. Hobson, all of Missoula. Butte was selected as the next place of meeting.

NEW YORK

New Officers.—At the annual meeting of the Albany County Medical Society, held in Albany, December 14, Dr. Howard E. Lomax was elected president; Dr. Charles H. Moore, vice president; Dr. Eddy S. Haswell, secretary, and Dr. Laurence R. Worrell, treasurer, all of Albany.

Legislation on Health Insurance Urged.—Representatives of the State Federation of Labor, at a conference held in Albany, January 8, committed themselves to a legislative program whereby they will seek to have endorsed the establishment of a state administered health insurance for wage earners. The federation is working for the creation of a bureau of sickness prevention and health promotion within the State Industrial Commission.

Law Forbidding Birth Control Propaganda Upheld.—In the case of Mrs. Margaret Sanger, who was convicted and served thirty days in the workhouse for disseminating information on birth control, and whose case was carried to the higher courts, the Court of Appeals has handed down a ruling that the section of the New York penal law prohibiting the dissemination of information concerning birth control is constitutional, and must be upheld by the courts.

Personal.—Dr. Dorr W. McLaury, Otsego County, has been appointed chief of the Bureau of Animal Industry of the state.——Dr. James E. Burns has been elected first mayor of the new city of Glen Cove.——Dr. John Archibold, Cohoes, has been appointed health officer, to serve during the absence of Dr. Clarence H. White, who is on duty in the military service.——Dr. James E. McDonald has been appointed a member of the board of health, Cohoes, succeeding Dr. Herbert R. N. Hebert, resigned to enter military service.

New York City

Sex Talks.—The Jewish Board for Welfare Work in the United States Army and Navy has secured the services of Dr. Irving D. Steinhardt in the teaching of sex hygiene to the camp workers of the organization. This instruction will be in the form of lectures, the first of which was given January 11

Assistant Medical Examiners.—Ten physicians formerly on the coroner's staff have been appointed assistant medical examiners. These are Drs. George W. Tong, Brooklyn; Albert T. Weston, George Wuest, Brooklyn; Timothy D. Lehane, Benjamin Schwartz, William H. Nammack, Far Rockaway; John Riegelman, Thomas H. Curtin, George W. Hart, Brooklyn, and George Mord, Rosebank. The positions, except those for Richmond, carry salaries of $3,000 a year.

Personal.—Dr. William P. Healy, dean and professor of gynecology in Fordham University since its reorganization in 1912, has resigned in order to devote himself exclusively to private practice.——Dr. Moses Kahn, Brooklyn, has been appointed a member of the attending medical staff of St. Anthony's Hospital for Tuberculosis, Woodhaven, L. I.——Dr. Earl H. Mayne, Brooklyn, has been appointed attending surgeon to Coney Island Hospital, succeeding Dr. Arthur H. Bogart, Brooklyn, resigned.——Prof. William Warren Stifler of Columbia University has arrived in Peking to take charge of the physics department of the Union Medical College.

Diet Squad Testing School Lunches.—Under the direction of the Post-Graduate Hospital, the People's Institute and the New York School Lunch Committee, twenty-seven public school boys, from 9 to 12 years of age, are being made the subject of an experiment as to the value of a noon lunch containing 900 calories. The object is to demonstrate what constitutes a proper school lunch, and to make the school lunch a civic necessity. The experiment is part of a plan to start a national campaign for the better feeding of schoolchildren, since recent investigations have indicated that a considerable proportion of the undernourishment found in schoolchildren is not so much due to poverty as to lack of knowledge as to what constitutes a proper diet for a growing child.

Columbia University Plans Diagnostic Clinic.—The trustees of Columbia University announce that plans are being perfected for the establishment of a large diagnostic clinic for the people who do not wish to accept charity and who are unable to pay for the services of a number of experts whose special advice or examinations may be needed in order to make a diagnosis. The plans propose that this clinic shall act as a distributing center for a number of hospitals. The financial arrangement provides that every clinical worker will be paid for his work and every patient charged a proper fee commensurate with his income. In his announcement, Dr. Samuel W. Lambert states that some opposition from the rank and file of the profession is expected; the aim of the clinic, however, will be to return the patient to the family physician for treatment after the diagnosis has been made.——Columbia University also contemplates adding a fifth year to the medical curriculum, during which all candidates for licensure will work in a hospital under college discipline, and that additional provision is to be made for postgraduate and research work.

NORTH CAROLINA

New Officers.—Guilford County Medical Society at Greensboro, January 3: president, Dr. May S. Miles; vice president, Dr. Edmund Harrison, and secretary-treasurer, Dr. Robert A. Schoonover (reelected), all of Greensboro.

Sanatorium Dormitory Burns.—Brooks Hall, one of the principal dormitories at the State Sanatorium, Raleigh, was destroyed by fire, December 17. No casualties occurred, but the superintendent of the institution, Dr. Lewis B. McBrayer, was obliged to return thirty patients to their homes. The loss was $3,500, partially covered by insurance.

OHIO

Land Acquired for Professional Block.—Physicians and Dentists Building Company of Cleveland has acquired an option on land at the northwest corner of Chester Avenue, N. E., and East Thirteenth Street, on which to erect a twelve-story building, to cost $800,000, for the exclusive use of professional men.

New Officers.—General Practitioners' Medical Society, Columbus, December 27: president, Dr. Ralph B. Taylor; vice president, Dr. Austin Hutt, and secretary-treasurer, Dr. George W. Keil (reelected).——Columbus Academy of Medicine, December 17: president, Dr. John L. Gordon, and vice president, Dr. John Rauschkolb.

Personal.—Dr. Samuel W. Kelley, Cleveland, has returned after eight months' service on the western front.——Dr. Frank L. Farman, Toledo, has succeeded Dr. Nelson H. Young as assistant superintendent of the Toledo State Hospital. Dr. Young has accepted a similar position at Fort Steilacoom,

Wash.——Dr. Sterling B. Taylor, Columbus, local surgeon for the Ohio Central Division of the New York Central Lines, has had his territory increased, and will also have charge of the Big Four system. Dr. Edgar M. Freese, Columbus, is his assistant.——Dr. Alvin L. Light has resigned as health commissioner of Dayton, and has been succeeded by Dr. Arthur O. Peters.

Cincinnati

Smallpox.—January 3, there were twenty-four cases of smallpox segregated at the General Hospital, eighteen of the patients being negroes, most of whom came from the South during the recent exodus.

Personal.—Dr. Charles A. L. Reed, who was taken ill in August last, is reported to be improving, and has gone South to spend the winter.——Dr. Frank W. Harmon, superintendent of Long View Hospital for thirty-seven years, has been granted an indefinite leave of absence and full pay, on account of ill health, and has gone to California. Dr. Emerson A. North of the Cincinnati Sanatorium has been appointed acting superintendent of the institution.——Dr. Hiram B. Weiss has been appointed successor to Dr. Thomas H. Kelly as assistant to Dr. Roger S. Morris, professor of internal medicine in the University of Cincinnati, and director of that department at the General Hospital.——Drs. Clyde F. Watt, D. C. Robbins and Paul H. Rowe of the resident staff of the General Hospital have resigned to assume similar positions in other cities.——Dr. R. E. Bushing, assistant superintendent of the Athens State Hospital, has offered his services as resident physician to the Cincinnati General Hospital.

New Charter Provisions.—January 1, a new charter went into effect in Cincinnati which places all of the medical, scientific and nursing work in the new City Hospital under the direction of the University of Cincinnati. The charter provides that the medical director of each department shall be the professor in the corresponding department of the medical college, and that the board constituted of these directors shall nominate to the board, through the president, all members of the staff of the hospital, including the superintendent, who shall be the general executive and business manager of the hospital. This superintendent will select all of the other employees under the rules of the civil service commission of the city. The charter thus removes the hospital entirely from the sphere of politics, places all the medical, scientific and nursing work under the direction of the medical college, and secures all of the facilities of the hospital for the purposes of education and research. The plans for the hospital were made by Dr. Christian B. Holmes, dean of the medical faculty, and the whole building scheme has been worked out to conform to these plans. The new building of the medical college, located on a 12-acre lot immediately across the street from the hospital, has just been completed and occupied. This gives Cincinnati a complete medical teaching and research plant, costing over $5,000,000. The medical college is a regular department of the university, and all of its expenses are paid by it. The city will continue to pay the general operating expenses of the hospital, such as the heating and lighting, food, engineers, janitors, etc., while the university will pay all the expense of the medical, surgical, scientific and nursing service. The total expenses to the city of operating the combined medical college and hospital plant will be, not including income on endowments, approximately $700,000 a year. The same charter provides for a reorganization of the board of directors of the university, who will now be appointed, one each year, to serve for nine years. The newly elected mayor has just announced the reappointment of the former board, which has managed the affairs of the university so successfully in recent time. These gentlemen are: Judge R. B. Smith, chairman, Mr. O. J. Renner, Dr. David I. Wolfstein, Mr. Sanford Brown, Dr. Walter R. Griess, Mr. Robert W. Hochstetter, Mr. A. R. Morgan, Mr. Emil Pollak and Dr. Erwin O. Straehley. The Baldwin estate, amounting to over $800,000, will be turned over to the university this month.

OREGON

State Health Board Meeting.—At the annual meeting of the Oregon State Board of Health, held in Portland, Dr. Alvane C. Seely, Roseburg, was elected president; Dr. Frank M. Brooks, Portland, vice president, and Dr. Robert E. L. Holt, Portland, secretary and state health officer.

New Officers.—At the annual meeting of the Coos and Curry Medical Association, held in Marshfield, the following officers were elected: president, Dr. James Richmond, Coquille; vice president, Dr. Leslie G. Johnson, Marshfield, and secretary-treasurer, Dr. Howard M. Shaw, Marshfield.

PENNSYLVANIA

Physician Sentenced to Prison.—Dr. Nathan C. Kartuh, East Vandergrift, confessed murderer of John Zofag, by poisoning, was sentenced, December 31, to imprisonment in the Western Penitentiary, for not less than nineteen years and ten months or more than twenty years. For conspiracy to defraud a life insurance company, he received a sentence of not less than two or more than three years, and for defrauding a life insurance company he was sentenced to pay a fine of $1,000, the penitentiary sentences running concurrently.

Personal.—Dr. Donald Guthrie, chief surgeon of the Robert Parker Hospital, Sayre, fell while skating, January 3, fracturing his left arm.——Lieutenant-Governor Gouverneur H. Boyer, president of the Schuylkill County Medical Association, was tendered a farewell reception at Pottsville, January 3, on the eve of leaving for military service.——Dr. Howard M. Essick, Essick Heights, was stricken with cerebral hemorrhage, January 2, and is under treatment at the Mary M. Packer Hospital.——Dr. Vere Treichler, Elizabethtown, slipped and fell, January 2, sustaining a comminuted fracture of the right arm.——Dr. Thomas E. Mendenhall, Johnstown, fractured his right arm while cranking his automobile, January 1.——Dr. William R. Deemer, Tarentum, suffered a fracture of the arm and narrowly escaped death when his automobile was struck by a freight train on the night of December 30, at a grade crossing.——The office of Dr. James R. Thompson, Pittston, was damaged in a fire which destroyed the Cash Store Block, December 31.

Philadelphia

Misericordia Dispensary Opened.—The new Misericordia Hospital at Fifty-Fourth and Cedar Avenue, in charge of the Sisters of Mercy, has started its dispensary, which will be open daily from 11:30 a. m.

Title of Pennsylvania Unit Changed.—The base hospital unit that was organized here by the Pennsylvania Hospital, and known as Hospital Unit No. 10, is established near the Allies' fighting front in France, and has been named Base Hospital No. 16, Philadelphia, U. S. A.

Officers Elected.—At the fiftieth annual business meeting of the Philadelphia County Obstetrical Society, January 3, the following officers were elected: president, Dr. Barton Cooke Hirst; vice presidents, Drs. F. Hurst Maier and John W. West; secretary, Dr. Edward A. Schumann, and treasurer, Dr. William E. Rorke.

Personal.—Drs. Clarence W. Schaeffer, George E. H. Johnson and Maurice Ostheimer have been appointed assistant diagnosticians of the bureau of health, with salaries of $1,800 a year each; Drs. Joseph D. Lehman and Martin Nevinger have been appointed supervising medical inspectors, with salaries of $1,600 a year each.——Dr. Ellwood R. Kirby has been elected chief consulting physician of the Eastern Penitentiary.——Dr. Edward A. Schumann has been made lecturer in obstetrics at the Jefferson Medical College.——Dr. Judson Daland, who was operated on in the German Hospital recently for stone in the kidney, is reported to be doing well.

SOUTH CAROLINA

Personal.—Dr. Thomas P. Whaley, Charleston, sustained painful burns when his bathrobe caught fire from a gas heater, at his home, December 28.——Dr. Robert L. Moore, Columbia, is reported to be seriously ill at the Columbia Hospital.

New Officers.—Newberry County Medical Society, at Newberry, December 14: president, Dr. Thomas H. Pope, Kinards; vice president, Dr. William Dunn, Newberry, and secretary-treasurer, Dr. John B. Setzler, Newberry.——Charleston Medical Society, one hundred and twenty-eighth annual meeting, at Roper Hospital, December 10: president, Dr. Robert S. Cathcart, and vice president, Dr. John M. Green.

Child Welfare.—The December number of the *Journal of the South Carolina Medical Association* is a child welfare number, the entire issue being devoted to that subject. There is a history of child welfare work in Columbia, an article from the National Children's Bureau on child welfare in war time, and a symposium of papers on infant mortality read at the state meeting at Spartanburg. The journal editorially recommends the creation of a bureau of child hygiene in the organization of the state board of health, such as is in existence in New York, New Jersey, Ohio and Kansas, and

also the passage of a law providing for school medical inspection. Two bills formerly passed by the legislature for this purpose were vetoed by a former governor. It is believed that Governor Manning will approve such a measure.

CANADA

Hospital Fire.—A woman and five children were killed in a fire which broke out in the Water Street Roman Catholic General Hospital, Ottawa, January 10, and one patient died of shock after her removal from the burning building.

Personal.—Dr. Andrew MacPhail, professor of medicine in McGill University, Montreal, was among those knighted in the annual distribution of New Year honors, in London.—— Dr. Wilfred T. Grenfell, Labrador, delivered the principal address before the Sunday Evening Club, in Chicago, January 13.

GENERAL

Fraternity Meeting.—The Alpha Kappa Kappa Medical Fraternity held a two days' session at the Adelphia Hotel, Philadelphia, January 3 and 4, at which the local chapters at the University of Pennsylvania and Jefferson Medical College acted as hosts. Thirty chapters of the fraternity were represented. The next convention will be held in Chicago in 1920.

Compilation of Digest of Comments on the U. S. P. and N. F. Continued.—The work of compiling the series of hygienic laboratory bulletins entitled "Digest of Comments on the Pharmacopoeia of the United States of America and on the National Formulary," which was interrupted by the illness and death of Technical Assistant Martin I. Wilbert, has been resumed by Dr. A. G. DuMez, who was appointed to succeed the former, June 1, 1917. The Digest of Comments for the calendar year ended Dec. 31, 1915, has been completed and is ready for publication, and considerable progress has been made in the preparation of the abstracts for the 1916 bulletin.

FOREIGN

Appeal for Private Automobiles in Italy.—The Italian Red Cross has issued an appeal to private owners of automobiles and trucks to loan all that can be spared "temporarily" to the government "during this exceptional period of febrile movement."

Prize for Bologna Professors.—An Italian senator recently bequeathed to the city of Bologna the sum of $100,000, the income from which is to be awarded every two years to the member of the faculty who has distinguished himself most by his teaching, his writings or his discoveries. The jury making the award includes the dean of the university, the mayor, the chief of police, president of the county board, and one other, to be appointed by the communal council.

Prizes Awarded by the Académie de Médecine at Paris.—This year the Académie had twenty-seven prizes to award, representing a total of nearly $18,000. One prize was given to Prof. F. Devé of Rouen for his works epitomizing many years of research on echinococcus disease. Another went to C. Flandin for his method of estimating the respiratory capacity of the blood in carbon monoxid poisoning by means of Haldane's apparatus. With this the degree of intoxication is estimated by the proportion between the poisoned hemoglobin and the total hemoglobin. It also is an index of the coefficient of vitality, that is, the ratio of the remaining respiratory capacity to the initial respiratory capacity. The Académie has received four new endowments for prizes during the year, and the wish was expressed by the secretary that such endowments should be made without restricting the award to a specified topic. Much more could be done for the progress of science if the sums available could be devoted to specially important questions and missions as need arises. Since the war began the Académie has lost seventeen members, four foreign associate members, and twenty-four national corresponding members, and no steps have been taken to date to fill their places, except the election of Soca of Montevideo and M. Couto of Rio to be foreign associate members. Dr. Cranwell of Buenos Aires has been foreign associate member for several years. The Académie voted to proceed now to fill the vacancies. The Audiffred prize, which represents an endowment providing an annual income of $4,800 at 3 per cent. for a sovereign cure for tuberculosis, naturally was not awarded. The only name not a French name on the list of recipients was A. Khoury of Beirut, Syria, who shared one of the prizes for his work on epinephrin treatment of uncontrollable vomiting in convalescents from typhoid.

Marriages

LIEUT. HARVEY COLUMBUS HARDEGREE, M. R. C., U. S. Army, Flushing, N. Y., L. I., on duty at Camp Devens, Ayer, Mass., to Miss Carolyn L. Malcolm of Bayside, N. Y., at Long Island City, N. Y., December 31.

CAPT. CHARLES ALBERT BARRON, M. R. C., U. S. Army, on duty at Camp Devens, Ayer, Mass., to Miss Edith Ryder of Chicago, at Evanston, Ill., January 3.

LIEUT. RAYMOND G. TUCK, M. R. C., U. S. Army, Brown City, Mich., to Miss Mabel Foutz of Olney, Ill., at Camp McArthur, Waco, Texas, January 1.

LIEUT. RUSSELL RULO HEIM, M. R. C., U. S. Army, Marinette, Wis., to Miss Mamie Elizabeth Anderson of Grantsburg, Wis., December 29.

CAPT. FRANK PAIGE TODD, M. R. C., U. S. Army, Danielson, Conn., to Miss Katherine R. Cooper of Philadelphia, December 1.

LIEUT. PLACIDO RAMOS VASQUEZ HOMMEL, M. R. C., U. S. Army, to Miss Maude Twining, both of Evanston, Ill, recently.

LIEUT. CHARLES A. YOCUM, M. R. C., U. S. Army, Reading, Pa., to Miss Mary B. Rahn of Douglassville, Pa., recently.

CLIFFORD COOPER, M.D., Cooperstown, Pa., to Miss Clara Nesbit of Franklin, Pa., at Pittsburgh, January 2.

JOHN LOUIS BRICKWEDE, M.D., Akron, Ohio, to Miss Aileen Bright Benner of Arlington, Ohio, December 27.

CARRIE S. STAINES, M.D., to Will K. Kellogg, both of Battle Creek, Mich., at Grand Rapids, Mich., January 1.

JOSEPH S. KOWALESKIE, M.D., to Miss Mary Willoughby, both of Shamokin, Pa., December 28.

Deaths

William Henry Sanders, M.D., state health officer of Alabama; aged 79; a Fellow of the American Medical Association; died at his home in Montgomery, January 2, after an illness of more than two years. Dr. Sanders was born in Tuscaloosa County, Ala., July 9, 1838, and took his medical course at Jefferson Medical College, Philadelphia, from which he was graduated in 1861. He served throughout the Civil War as a surgeon in the Confederate service, and after the war located in Mobile, where he remained until he became state health officer in 1897. During this time he was professor of ophthalmology, otology, rhinology and laryngology in the University of Alabama, Mobile. For nineteen years he was state health officer and chairman of the State Board of Censors, and secretary of the State Board of Medical Examiners, retiring two years ago, on account of ill health. Dr. Sanders was a man of great force of character. He was a worthy successor to Dr. Jerome Cochran, whose benevolent autocracy in health matters in the state Dr. Sanders continued throughout his long term as state health officer. He was president of the Medical Association of the State of Alabama in 1891, and frequently represented that constituent in the House of Delegates of the American Medical Association.

Thomas Davison Crothers, M.D., Hartford, Conn.; aged 75; an ardent advocate of total abstinence, died, January 12, from arteriosclerosis. He was born in West Charlton, N. Y., Sept. 21, 1842, and after his preliminary education at the Fort Edward (N. Y.) Seminary, he pursued his medical studies at the Albany (N. Y.) Medical College, from which he was graduated in 1865. After four years' practice at West Galway, N. Y., he returned to Albany, and was assistant professor of practice of medicine in his alma mater. In 1875 he became assistant physician in the New York Inebriate Asylum, Binghamton. Three years later he was made superintendent of the Walnut Hill Asylum, Hartford, Conn., and after two years became president and superintendent of the Walnut Lodge Hospital, Hartford, positions which he held until his death. In 1876 he established the *American Journal of Inebriety*, and continued in editorial charge until his death. He was also the author of several monographs on inebriety and the drug habit.

John Eaton Darby, M.D., Cleveland; Western Reserve University, Cleveland, 1861; aged 82; formerly a Fellow of the American Medical Association; demonstrator of anatomy in

his alma mater in 1861 and 1862; a surgeon of U. S. Volunteers throughout the Civil War; surgeon of the Cleveland and Pittsburgh Railroad from 1867 to 1877, and visiting physician to the Lakeside Hospital during the same period; a member of the medical board of the Cleveland City Hospital from 1895 to 1898; professor of materia medica and therapeutics in his alma mater from 1867 to 1896, and thereafter emeritus professor; died at his home, January 4, from cerebral hemorrhage.

Capt. John Weaver Luther, M. R. C., U. S. Army; Palmerton, Pa.; University of Pennsylvania, Philadelphia, 1899; aged 42; a Fellow of the American Medical Association; chief surgeon for the Central Railroad of New Jersey; formerly instructor in gynecology in his alma mater; assistant gynecologist to the University Hospital and obstetrician to the Maternity Hospital; surgeon-in-chief of the Palmerton Hospital; president of the Palmerton Citizen's Co-Operative Association, and of the Lehigh Valley Medical Association, and for five years burgess of Palmerton; died in Jacksonville, Fla., December 28, from pneumonia.

Robert Chilton Atkinson, M.D., St. Louis; Tulane University, New Orleans, 1867; aged 76; formerly a member of the Missouri State Medical Association; assistant superintendent of the St. Louis City Hospital; once a member of the state board of health, and its secretary for two years; a member of the St. Louis board of education; for one year coroner of St. Louis City County, and for eight years a member of the board of hygiene of the public schools; for eighteen years a member of the faculty of the Marion-Sims Medical College, and St. Louis University; a verteran of the Civil War; died at his home, December 31.

Capt. Nelson Macpherson Ferebee, Medical Director, U. S. Navy (retired), Oxford, N. C.; University of Maryland, Baltimore, 1871; aged 68; who was appointed assistant surgeon in the Navy in 1872, and was retired, Dec. 31, 1904, on account of incapacity resulting from an incident of service, after thirteen years and three months of sea service, and thirteen years and eight months of shore and other duties, including the establishment of a hospital and free dispensary in Sitka, Alaska; died at his home, November 25.

Frederick Morse Wilson, M.D., Bridgeport, Conn.; Harvard Medical School, 1875; aged 66; a Fellow of the American Medical Association, American Ophthalmological Society and American Otological Society; a specialist on diseases of the ear, nose and throat; one of the founders of the Bridgeport Yacht Club, and president of the Bridgeport Hospital; who left for the Canal Zone, December 3, to be present at the wedding of his daughter in Colon; died in that city, December 17.

Jehu Z. Powell, M.D., Logansport, Ind.; University of Michigan, Ann Arbor, 1874; aged 69; a Fellow of the American Medical Association and a specialist in diseases of the ear, nose and throat; at one time in charge of the Hospital of the National Military Home, Johnson City, Tenn.; postmaster of Logansport from 1898 to 1902, and for four years a member of the city council; died in St. Joseph's Hospital, Logansport, January 6, from intestinal disease.

John Harrigan, M.D., Brooklyn; Long Island College Hospital, Brooklyn, 1874; aged 72; formerly a member of the Medical Society of the State of New York; a member and since 1903 president of the staff of St. Mary's Hospital, Brooklyn; for many years a member and vice president of the Brooklyn board of education; since 1899 a member of the board of regents of his alma mater; died at his home, December 30, from heart disease.

Ernest Albert Cranston, M.D., Calais, Me.; College of Physicians and Surgeons, Boston, 1905; aged 57; a member of the Maine Medical Association; city physician of Calais, and coroner of Washington County; for twelve years a clergyman; died at his home, December 14, from pericarditis, endocarditis and cerebral thrombosis.

William W. Vinnedge, M.D., Lafayette, Ind.; Medical College of Ohio, Cincinnati, 1869; aged 72; a member of the Mississippi Valley Medical Association; from 1872 to 1876 coroner of Tippecanoe County, Ind.; died at the home of his daughter in Chatham, N. J., December 28, from arteriosclerosis.

Aimé Moors Blossom, M.D., Montclair, N. J.; Cleveland College of Physicians and Surgeons, 1893; for many years a practitioner of North Adams and Nantucket, Mass.; died at the home of her daughter, Montclair, N. J., November 29.

Jephtha D. Garner, M.D., Maryville, Tenn.; Physio-Medical College, Cincinnati, 1865; aged 86; founder and for many years principal of the Friends' School, Maryville, and U. S. Indian agent for the Cherokee Indians in Tennessee and North Carolina; died at his farm near Maryville, December 24.

Albert D. Lowry, Valley Falls, Kan. (license, Kansas, 1901); aged 41; a Fellow of the American Medical Association, and once vice president of the Jefferson County Medical Society; local railway surgeon; formerly coroner of Jefferson County; died at his home, December 29, from heart disease.

Earl Benjamin Maxwell, M.D., Findlay, Ohio; Boston University, 1916; aged 30; a member of the Ohio State Medical Association; health officer of Allen Township; died in St. Vincent's Hospital, Toledo, Ohio, December 25, from surgical shock following an operation for cervical adenitis.

Moses Joseph Jackson, M.D., New York City; New York University, New York City, 1893; aged 68; a member of the Medical Society of the State of New York, and a fellow of the New York Academy of Medicine; coroner's physician from 1892 to 1905; died at his home, January 3.

Benjamin Buckman, Jr., M.D., Butler, Ill.; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, 1908; aged 41; formerly a member of the Arkansas Medical Society; died at the home of his father in Farmingdale, Ill., December 9, from paralysis and endocarditis.

Edward Bolliver Bracy, M.D., Mitchell, S. D.; Eclectic Medical Institute, Cincinnati, 1869; formerly a member of the South Dakota State Medical Association, and a pioneer practitioner of Mitchell; a trustee of the Dakota Wesleyan University; died at his home, December 28.

Christian F. Tegtmeier, M.D., Conshohocken, Pa.; Hahnemann Medical College, 1895; aged 54; for four years president of the Conshohocken school board, and for nearly twenty years prior to that time, school director; died at his home, December 26, from disease of the liver.

Daniel P. Maddux, M.D., Chester, Pa.; Hahnemann Medical College, Philadelphia, 1883; aged 55; chief of the surgical staff of the J. Lewis Crozer Hospital; a member of the state board of medical examiners in 1903; died at his home, January 3, from pneumonia.

Frederick Miner Wagner, Jr., M.D., Wampum, Pa.; Jefferson Medical College, 1906; aged 38; a Fellow of the American Medical Association; was instantly killed, January 3, when his automobile was struck by a train at a grade crossing at Newcastle, Pa.

George Schmauch, M.D., Chicago; University of Königsberg, Germany, 1892; aged 51; a Fellow of the American Medical Association; died while proceeding to a professional call in one of the northwestern suburbs during the blizzard of January 13.

Morris Hughes, M.D., Kennett Square, Pa.; Hahnemann Medical College, Philadelphia, 1884; aged 64; secretary of the board of health of Kennett Square, and organizer of the Homeopathic Hospital at Chester, Pa.; died at his home, January 1.

Edwin Boardman Adams, M.D., Springfield, Mass.; College of Physicians and Surgeons in the City of New York, 1880; aged 66; a member of the Massachusetts Medical Society; died at his home, December 21, from pneumonia.

Charles Perry Simons, M.D., Caldwell, Ohio; Medical College of Ohio, Cincinnati, 1874; aged 75; assistant surgeon of the Ninety-Eighth Ohio Volunteer Infantry throughout the Civil War; died at his home, December 19, from paresis.

Royal Hatch, M.D., Wellesley, Mass.; Harvard Medical School, 1904; aged 39; a Fellow of the American Medical Association; chairman of the Wellesley board of health; died at his home, December 30, from pneumonia.

Harry Picking Eisenhart, M.D., Harrisburg, Pa.; Jefferson Medical College, 1906; aged 46; a Fellow of the American Medical Association; also a graduate in pharmacy; died at his home, December 28, from pneumonia.

Edward Homer Martin, M.D., Middlebury, Vt.; University of Vermont, Burlington, 1894; aged 56; a Fellow of the American Medical Association; died in the Mary Fletcher Hospital, Burlington, December 30.

Robert A. Cunliffe, M.D., Milwaukee, Wis.; Northwestern University Medical School, Chicago, 1905; aged 37; formerly of Chicago; died at the home of his parents in Milwaukee, January 8, from brain tumor.

Martin Oyen, M.D., East Ellsworth, Wis.; University of Minnesota, Minneapolis, 1899; aged 35; a Fellow of the American Medical Association; died at his home, December 28, from pleuropneumonia.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticized

[FORWARD.—The article that follows is the fourth[1] of a series written for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures. Although the preparations which will be taken up in this series have been extensively dealt with in previous reports, the fact that they are still widely advertised and sold indicates the need of further publicity. The series is written by a man who is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[ARTICLE IV]

CACTINA PILLETS

By S. Q. Lapius, M.D.

This preparation may be considered briefly in view of the recent discussion in this series of articles of the pharmacology of the digitalis group and the principles of treatment in cardiovascular disease. The manufacturers maintain that cactina is wholly unlike digitalis, and that is the truth, as we shall show, but since they claim that it is useful in certain conditions of the heart in which digitalis is commonly employed by well informed clinicians it is necessary to consider its cardiac actions—or its lack of them! It is difficult to determine just what action cactina is supposed to exert on the heart. For example, one advertisement contains the following:

"Cactina Pillets. A gentle cardiac tonic that supports and sustains the heart through its capacity to improve cardiac nutrition."

Just how the cardiac nutrition is to be improved without an improved coronary circulation is not explained. It would be interesting to know in what other way this is to be accomplished, and how an improved coronary circulation can be induced without acting on the heart or vessels. But that is what digitalis does, and you should remember that cactina is so very different from digitalis! Then again:

"Cactina Pillets. A remedy that steadies and strengthens the heart by imparting tone to the heart muscle."

That is a pretty direct statement, but digitalis imparts tone and we must not forget that "cactina" is wholly unlike digitalis, and we are told that "cactina" is:

"Invaluable in all functional cardiac disorders such as tachycardia, palpitation, arrhythmia, and whenever the heart's action needs regulating or support."

If these are merely functional disorders of the heart it is highly desirable to know what are the symptoms of really serious cardiac disease! Since the manufacturers give us no information concerning the mode of action of "cactina" we will turn to the literature of disinterested observers. If one attempts to discover the origin of "cactina," he will probably meet with disappointment, for various bibliographies fail to mention the name of Sultan, who is said to have isolated "cactina" from *Cactus grandiflorus*. It seems that Sultan worked with *Cactus*, or some other plant, when a student of pharmacy, and it is to be remembered that Cactina Pillets are manufactured by the Sultan Drug Company.

1. The previous articles of the series are "Bell-ans," THE JOURNAL, Nov. 24, 1917, p. 1815; "Anasarcin and Anedemin," THE JOURNAL, Dec. 8, 1917, p. 1992; "Pepto-Mangan," THE JOURNAL, Dec. 29, 1917, p. 2202.

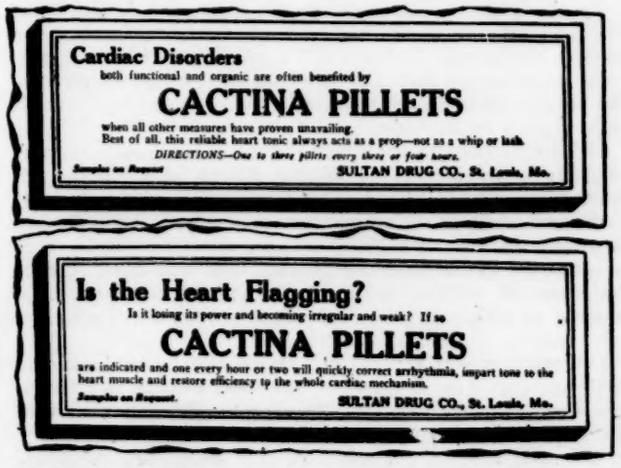
It is doubtful whether Sultan actually worked with genuine *Cactus grandiflorus*, and in fact, there is good reason for thinking that he did not, for all subsequent workers who have taken pains to secure genuine *Cactus grandiflorus* have failed to detect the presence of any active principle, except possible traces that are of no therapeutic importance whatever.

WHAT THE COUNCIL FOUND

The Council on Pharmacy and Chemistry examined the literature relating to cactus and certain proprietary preparations, including Cactina Pillets, alleged to be made from cactus, and has reported the results of its investigation (THE JOURNAL, March 12, 1910, p. 888) and we will quote from that report.

> "The therapeutic value of this plant has been variously estimated by different observers. Experimental evidence as to its action is scanty and no complete chemical examination has ever been made.
>
> "Reputable men have testified that some of the plants of the cactus family contain very active principles, but so far experiments seem to prove that Cactus grandiflorus has neither the action of digitalis nor that of strychnin. The principal contributions, clinical and experimental, for and against the drug are set out below."

The report then proceeds to analyze the work of O. H. Myers, R. A. Hatcher, Boinet and Boy-Teissier, Sayre, Gordon Sharp, S. A. Matthews, P. W. Williams, Aulde and


Cardiac Disorders
both functional and organic are often benefited by
CACTINA PILLETS
when all other measures have proven unavailing.
Best of all, this reliable heart tonic always acts as a prop—not as a whip or lash.
DIRECTIONS—One to three pillets every three or four hours.
Samples on Request
SULTAN DRUG CO., St. Louis, Mo.
Is the Heart Flagging?
Is it losing its power and becoming irregular and weak? If so
CACTINA PILLETS
are indicated and one every hour or two will quickly correct arrhythmia, impart tone to the heart muscle and restore efficiency to the whole cardiac mechanism.
Samples on Request.
SULTAN DRUG CO., St. Louis, Mo.

Typical advertisements of "Cactina Pillets" from the *Medical Record* and *New York Medical Journal*, respectively.

Ellingwood, and comes to conclusions that are set forth as follows in brief:

1. It is uncertain what part of the plant contains the active principle, if any such principle exists.

2. Part of the experimental and clinical work has been published under proprietary auspices.

3. The value of clinical evidence when unsupported by animal experimentation is much diminished by the tendency of enthusiastic and untrained observers to attribute to the drug given the effect really due to general remedial measures, psychic suggestion and so forth.

In other words, the literature does not afford a report of a single piece of careful painstaking work the results of which lend support to the claims made for Cactina Pillets as stated above, for it is obvious that if *Cactus grandiflorus* contains no active principle, no active principle can be extracted from it. Some time after the report of the Council was published, Hatcher and Bailey secured genuine *Cactus grandiflorus* directly from a competent botanist, Dr. C. A. Purpus, of Vera Cruz, Mexico, and studied it experimentally. They reported (THE JOURNAL, Jan. 7, 1911, p. 26) in part as follows:

> "We have been unable to obtain any evidence that the true Mexican *Cactus grandiflorus* possesses any pharmacologic action whatever, but on the contrary, it appears to be a singularly inert substance when administered either by the mouth or by the vein."

When colossal doses of *Cactus grandiflorus* are given by the vein they sometimes—but not always—appear to exert an extremely feeble action on the heart; but this action is so slight that its nature could not be determined. Even the most colossal doses of *Cactus grandiflorus* administered by the mouth to cats, dogs and frogs exert no perceptible effect.

Sollmann thus satirizes the absurd claims made by the exploiters of proprietary forms of cactus: "Should the heart be too slow, cactus quickens it; if the heart is too fast, cactus slows it; should the heart be too weak, cactus strengthens it; if the heart is too strong, cactus weakens it; does the heart wobble, cactus steadies it; if the heart is normal, cactus does not meddle with it" (THE JOURNAL A. M. A., July 4, 1908, p. 52).

Will physicians continue to accept the statements of an interested nostrum vendor—who submits not a shred of evidence to support his claims, but who has a financial interest in convincing them—even when his statements are diametrically opposed to all the evidence that the Council on Pharmacy and Chemistry has been able to secure?

Correspondence

THE RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN

To the Editor:—The Red Cross Institute for Crippled and Disabled Men is organizing an institution in New York to provide the special instructional opportunities for the physically handicapped that will make the cripple productive, and the special placement facilities that will secure for him the right type of employment.

We are anxious to have referred to us by physicians, particularly in the New York district, but in exceptional cases from other sections of the country, men who would profit by such opportunities as the institute may offer. Almost every medical man will be acquainted with some men whose need is industrial rather than therapeutic: men who have reached the stage of medical finality but who will require special training or adaptation to enable them to regain the status of self-support.

The cases in which profit can be derived by reeducational work are varied in character. The most obvious are amputation cases, but others readily suggest themselves: severe rheumatism, Pott's disease, paralysis of individual members. In all such cases the benefits of the specialized industrial educator should supplement the work of the surgeon.

We shall appreciate, from members of the profession, reference of any men to whom we might possibly be helpful.

DOUGLAS C. MCMURTRIE, 311 Fourth Avenue, New York.
Director, Red Cross Institute for Crippled and Disabled Men.

URGENT NEED OF A NATIONAL LEPROSARIUM

To the Editor:—There is at present a case of leprosy at Biloxi, Miss., which reemphasizes the facts and arguments presented to the Senate Committee on Public Health and National Quarantine in behalf of a plea for the establishment of a national leprosarium. The Senate committee promptly recommended the establishment of such an institution and an appropriation of $250,000. The bill received favorable congressional recommendation and was approved by the President, but no further action seems to have been taken with reference to this matter, which is one of urgent importance to the country at large.

The leper at Biloxi was apprehended by the health officer of Harrison County, Dr. D. J. Williams, while at work in an oyster-opening and canning establishment. The disease was in a well advanced stage, leaving no question of doubt that the case must have been known locally for perhaps a year or more. The leper readily complied with the request of Dr. Williams that he abstain from work and confine himself as much as possible to his home. He lives with his aged mother, a brother, and one or two sisters. He is not restricted in his movements, and quite recently made a trip to New Orleans for medical consultation. As far as known, he did not consult a leprologist. His trip to New Orleans was in violation of a federal statute prohibiting interstate migration of persons afflicted with leprosy. The case is, therefore, one demanding interference on the part of the federal health authorities. The case is also clearly one most suitable for segregation in such an institution as was intended to be established by the act providing for a federal leprosarium. There are no facilities for the proper treatment of leprosy in the state of Mississippi. The powers of the state board of health are inadequate to deal with the case in a suitable manner. The manufacture of the product at which the leper was employed is one that enters extensively into interstate commerce. There are reasons for believing that there are three or four other cases of leprosy in Biloxi and vicinity. A new case, a woman, has just been reported by the local health officer to the Mississippi State Board of Health. It is understood that the authorities of the Louisiana Leper Home have considerately offered to take care of this patient, in return for the reimbursement of only the actual expenses. There are, however, reasonable objections on the part of the people of Louisiana against an increase in the number of lepers in their state by the admission of patients from other states. The question, therefore, is pertinent as to why the establishment of a federal leprosarium should have been so long delayed, in view of the fact that a sufficient appropriation has been made therefor, and why this and other isolated lepers should continue a menace to the community in which they live and to the country at large.

FREDERICK L. HOFFMAN, Newark, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE PROVISION OF PERMIT AND BOND FOR USING AND DISPENSING ALCOHOL

To the Editor:—Will you please give me information concerning the bond required of physicians for the right to use pure grain alcohol, the amount of the bond, by whom to be signed, and other information necessary that I may comply with the law?

EDGAR C. DENNEY, M.D., Milton, Ind.

To the Editor:—Do I understand that a doctor has no right to dispense tinctures without a permit? Most doctors in country practice are obliged to dispense from their cases tincture of digitalis and other tinctures or fluidextracts.

GEORGE D. CARNES, M.D., South Haven, Mich.

To the Editor:—Is it a fact that a physician is required to give bond in order to prescribe medicine containing alcohol? Will not a bond endorsed by a private citizen, which any doctor ought to be able to have done, be sufficient without having to pay a bonding company for it?

S. H. G., Chicago.

To the Editor:—I am enclosing a letter which bonding companies or their agents are sending to physicians. I have not seen the law covering this matter, and if you have not already given a summary of this law in THE JOURNAL, I shall appreciate having you do so.

BERNARD C. FREY, M.D., Jennings, Ind.

ANSWER.—The foregoing questions are selected from many which have been received, showing that physicians are not fully informed as to the requirements of the new regulations on alcohol or as to how these affect physicians. A short abstract of the treasury decisions governing the execution of the regulations appeared in THE JOURNAL, Dec. 22, 1917. As noted by the letters, some of the surety companies are offering to give bond for physicians, and state that every physician and druggist is required by the United States to furnish a bond before he may lawfully use or purchase alcohol for use and resale. This is not strictly correct.

The act of Congress of Aug. 10, 1917, known as the Food Control Act, provides that no food materials shall be used in the production of alcohol for beverage purposes after Sept. 0, 1917, but that under such regulations as the President may prescribe, such materials may be used for producing alcohol

for nonbeverage purposes. Under the War Revenue Act of Oct. 4, 1917, which went into effect, Dec. 1, 1917, and the subsequent regulations, druggists and physicians or others desiring to use or sell distilled spirits for medicinal or any other nonbeverage purposes are required to obtain a permit and file a bond with the government, provided, however, they desire to use or sell alcohol beyond the limitations prescribed. The matter concerns the physician on the question of supplying himself with tinctures, fluidextracts and other prescriptions containing alcohol, of prescribing these for his patients, of securing alcohol for antiseptic purposes or for bathing, and finally and especially it concerns those physicians who dispense their own medicines.

A physician need not give bond and secure a permit if he wishes merely to prescribe, as bonded druggists are permitted to fill prescriptions containing pure beverage alcohol if sufficient drugs are added to prevent the prescription's being used for beverage purposes. A physician who is not bonded, just as any layman, may purchase alcoholic medicinal preparations from a bonded druggist, provided such preparations contain ingredients sufficient in quantity and of such a nature as to render the finished product unfit for use as a beverage.

As regards the use of alcohol for topical or local applications: Bonded druggists are permitted to sell to any one quantities of alcohol up to 1 pint, provided this alcohol has been modified as provided by the regulations to prevent its use as a beverage. The container of such alcohol must bear the "poison" label. The following are the modifications that meet government approval:

1. Carbolic acid 1 part, alcohol 99 parts.
2. Formaldehyde 1 part, alcohol 250 parts.
3. Bichloride of mercury 1 part, alcohol 2,000 parts.
4. Bichloride of mercury 0.8 gram, hydrochloric acid 60 c.c., alcohol 640 c.c., water 300 c.c.
5. Bichloride of mercury 1½ grains, hydrochloric acid 2 drams, alcohol 4 ounces.
6. Formaldehyde 2 parts, glycerin 2 parts, alcohol 96 parts.
7. Carbolic acid 1 dram, tannic acid 1 dram, alcohol 1 pint, water 1 pint.
8. Alum ½ ounce, formaldehyde 2 drams, camphor 1 ounce, alcohol and water, each 1 pint.
9. Lysol 1 part, alcohol 99 parts.
10. Liquor cresolis comp. (U. S. P.), 10 c.c., alcohol 1,000 c.c.

As will be noted, the druggist who uses and sells alcohol in quantities must give bond and obtain a permit. As the physician who dispenses alcohol or alcoholic preparations places himself in the position of a druggist, he too must give bond and secure a permit. But it is clear that the physician who simply prescribes alcoholic preparations or alcohol for local use, or who uses small quantities of alcohol in his office as an antiseptic, etc., need not give bond or secure a permit, as his practice is not interfered with by the law. Therefore it is not necessary for physicians who do not dispense to give bond and secure a permit.

Hospitals, laboratories and those using large quantities of alcohol will have to secure the permit. The regulations state that application for a permit to use and sell alcohol must be accompanied by a bond in duplicate, the amount or penal sum of the bond to be equal to $3 a proof gallon on the maximum quantity of proof gallons which the applicant expects or is likely to have on hand or in transit to him at any one time. The bond may be one issued by a bonding company or a personal bond of the applicant with two sureties acceptable to the collector of internal revenue, or a personal bond supported by a deposit of Liberty bonds or other United States bonds, with face value not less than the penal sum of the bond. Bonding and surety companies are charging $5 for executing such a bond. Personal sureties must be approved by the collector of internal revenue.

To repeat, the average physician will not need to secure a permit; the physician who dispenses places himself in the position of a druggist and must have a permit.

Why a Birth Certificate.—(1) To establish identity; (2) to prove legitimacy; (3) to show when the child has the right to enter school; (4) to show when the child has the right to seek employment under the child labor law; (5) to establish the right to inheritance to property; (6) to establish liability to road and military duty, as well as exemption therefrom; (7) to establish the right to vote; (8) to qualify, to hold title to and to buy or sell real estate; (9) to establish the right to hold public office; (10) to prove the age at which the marriage contract may be entered into; (11) to comply with the law of the state.—North Carolina *Health Bulletin*, August, 1917.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALASKA: Juneau, March 5. Sec., Dr. L. P. Dawes.
CALIFORNIA: Los Angeles, Feb. 18. Sec., Dr. Charles B. Pinkham, State Capitol, Sacramento.
ILLINOIS: Springfield, Feb. 6-7. Supt. F. C. Dodds, Springfield.
IOWA: Des Moines, Feb. 5-7. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, Feb. 12. Sec., Dr. H. A. Dykes, Lebanon.
NEW YORK: Albany, Buffalo, New York City and Syracuse, Jan. 29-Feb. 1. Sec., Dr. W. J. Denno, Education Bldg., Albany.
VERMONT: Burlington, Feb. 12. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Laramie, Feb. 6-8. Sec., Dr. H. E. McCallum, Laramie.

Arkansas November Examination

Dr. T. J. Stout, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, Nov. 13-14, 1917. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 10 passed and 2 failed. The following colleges were represented.

College	PASSED	Year Grad.	Per Cent.
Coll. of Phys. and Surgs., Little Rock	(1910) 83.7,	(1911)	77.6
University of Arkansas	(1905) 77;	(1907)	75
Chicago College of Medicine and Surgery		(1914)	80.2
Louisville Medical College		(1891)	79.5
University of Louisville		(1908)	80.5
University of Michigan Medical School		(1911)	88.3
Chattanooga Medical College		(1903)	80
Meharry Medical College		(1916)	75.8
	FAILED		
Birmingham Medical College		(1915)	*
College of Physicians and Surgeons, Little Rock		(1910)	52.4

* No grade given.

Connecticut November Examination

Dr. Charles A. Tuttle, secretary of the Connecticut State Medical Examining Board, reports the written examination held at New Haven, Nov. 13-14, 1917. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 29 candidates examined, 18 passed and 11 failed. The following colleges were represented:

College	PASSED	Grad. Year	Cent. Per
Yale University		(1917)	75.9, 80.4
Howard University		(1917)	75.3
Bowdoin Medical School		(1917)	75.2, 80.5
College of Physicians and Surgeons, Baltimore		(1914)	75.3
University of Maryland		(1917)	83.5
Harvard University		(1916)	81.1
Tufts College Medical School		(1917)	75.9
Columbia University		(1917)	80.7, 81.4
Fordham University		(1917)	82.2
University and Bellevue Hospital Medical College		(1909)	75.5
Jefferson Medical College of Philadelphia		(1916)	79.4
University of Pennsylvania		(1910)	75.5
University of Vermont	(1912) 75.8;	(1917)	81.6
University College of Medicine		(1904)	75.9
	FAILED		
Chicago College of Medicine and Surgery		(1916)	71.8
University of Maryland		(1916)	72.6
Harvard University		(1915)	69.6
Tufts College Medical School	(1915) 73.9;	(1917)	71.1, 71.3
Albany Medical College		(1913)	71.2
University of Pennsylvania		(1917)	70.2
University of Vermont	(1914) 59.5;	(1917)	72.2
University of Athens		(1911)	60.9

Nevada November Examination

Dr. Simeon L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 5-7, 1917. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Kentucky School of Medicine of Louisville		(1906)	79.7
University of Pennsylvania		(1915)	89.7

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas		(1913)	Arkansas
Georgia College of Eclectic Medicine and Surgery		(1916)	Arkansas

Chicago Homeopathic Medical College	(1900)	Illinois
University of Illinois	(1914)	Illinois
University of the City of New York	(1883)	Minnesota

Rhode Island October Examination

Dr. B. U. Richards, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, Oct. 4-5, 1917. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Five candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Boston University		(1916)	87.4
Harvard University		(1917)	84.6, 88.3
Tufts College Medical School		(1917)	87.6
Medical College of Virginia		(1917)	88.4

Book Notices

NATIONAL HEALTH INSURANCE. Third Annual Report of the Medical Research Committee, 1916-1917. Paper. Price, 6 pence net. Pp. 88. London, 1917.

This report, for the year ending Sept. 30, 1917, sets forth separately the work of the Medical Research Committee of the national health insurance organization on matters not related especially to military experience, and that relating to problems arising out of the medical side of the war. It is said, however, that in their scientific methods and results the two sets of investigations meet inseparably.

In the department of bacteriology under Col. Sir Almroth Wright, there has been a continuation of the study of the physiology and scientific treatment of wounds, particularly with reference to acidemia or diminished alkalinity of the blood in cases of gas gangrene, and antiseptics for the treatment of wounds; trench nephritis and the classification of nephritides; skin grafting; rat bite fever, and dysentery.

In the department of biochemistry and pharmacology, among the subjects have been amebic dysentery, surgical shock and allied conditions, organic compounds of antiseptic value, buffer salts of the blood, the toxicology of trinitrotoluene, and confidential inquiries into poison gases.

In the department of applied physiology under Leonard Hill, among the topics studied were canteens and dietaries of workers, principles of ventilation, poison gases, bread and other foodstuffs, trinitrotoluene poisoning, and photochemical syntheses.

Among the subjects for research taken up before the war and continued in the present report are special bacteriologic problems of tuberculosis and the pathology of its infection, tuberculin treatment and immunity, and the incidence of tuberculosis in relation to particular occupations; rickets and tetany; milk and its problems; chronic rheumatoid arthritis, diabetes and diseases of the heart, besides some pathologic researches.

In this report the results attained are taken up in some detail with reference to certain subjects, but in most instances findings or indications of results expected to be obtained by a continuation of the researches are mentioned, and the reader is referred to published details of the work elsewhere, or yet to be published. Much of the report is taken up with the organization and changes in the committee, with details of administration, etc. Acknowledgement is made of service rendered by many American scientists in the prosecution of the researches of the committee.

MEDICAL BACTERIOLOGY. By John A. Roddy, M.D., Associate in Hygiene and Bacteriology, Jefferson Medical College. Cloth. Price, $2.50 net. Pp. 285, with 46 illustrations. Philadelphia: P. Blakiston's Son & Co., 1917.

Believing that bacteriology has so expanded that a complete systematic exposition of the subject is no longer possible in a single volume, the author presents this work as a textbook for diagnosis and a laboratory guide for students, medical practitioners and pharmacists. It will be found a suitable book for the purpose for which it was prepared.

Social Medicine, Medical Economics and Miscellany

THE FUNCTIONS OF A MUNICIPAL SANATORIUM

A Policy That Would Control a Group of Sputum-Positive Consumptives Not Now Reached by Any Preventive Measure *

CHARLES B. SLADE, M.D.
Attending Physician, Municipal Sanatorium, Otisville, N. Y.
NEW YORK

Until comparatively recently, the almost exclusive object of the sanatorium was the cure or arrest of pulmonary tuberculosis.

With this point of view universally accepted by tuberculosis specialists, it was logical that only the patients with incipient lesions or very early and distinctly hopeful cases were considered eligible for admission. This view, though in the process of gradual modification, has not yet been entirely eradicated from the minds of some present day leaders in this work, a fact made vividly apparent in the leading article of the October number of the *Journal of the Outdoor Life*.

It must be admitted that the arrest, temporary or permanent, of the disease in those cases still susceptible of arrest, to permit the return of the patients to normal lives, is important — so important an object of sanatorium treatment that no change should be instituted which would jeopardize that result.

It is, however, a fact, which all of those with extensive experience in this field have observed, that in a regrettably large percentage of the not well-to-do, who cannot choose the occupation to which they return, the arrest is extremely temporary. Those of us who have had considerable experience with these patients, both in city clinics and during their return trips to the sanatorium, know that this percentage is larger than we thought some years ago, just how large, the present ineffectiveness of our follow-up work will not permit us to answer. Since this condition exists, if we are fully to justify the up-keep of the sanatorium, we must develop to a higher point of efficiency its other functions that benefit the community. Two other functions of the sanatorium, of prime importance to the community, are the dissemination of *education* on the control of tuberculosis, and *segregation* of sputum-positive consumptives. The former, education, has been given much study and attention. Much has been accomplished and much still remains to be accomplished in this line. But we are not here primarily concerned with that branch of the subject.

Before discussing the primary object of my appeal, I wish to emphasize the fact that any scheme adopted for the control of tuberculosis in a city, which disassociates, or only loosely associates, the various agencies and factors employed, is doomed to failure, or at best, only partial success. This was realized in England many years ago, and the supervision of all matters governing tuberculosis was placed under the direction of one physician with the title of Tuberculosis Officer.

In most large cities of the United States there are provided hospitals for advanced cases, sanatoriums for the early or hopeful cases, and clinics, with social aid and advice, for the home cases among the poor.

These facilities are provided in fair proportion to the various needs and the purse of the communities. Laws are provided to prevent spitting in public conveyances and other places where persons congregate. Sputum-positive consumptives who are known to be careless are forced into hospitals, and it is generally felt that every practical effort is made to prevent the transmission of tubercle bacilli from the affected to the well. Yet here, as in all work, it is not so much what tools we have, but how well we use them.

* Read before the Society of the Alumni of Bellevue Hospital, Nov. 7, 1917.

There are still a considerable number of people whose sputum is alive with tubercle bacilli, and who travel daily among uninfected susceptible persons. They know they have tuberculosis, and they are making all possible efforts to avoid being a source of infection to others; but can they prevent sneezing or suddenly coughing at times—sometimes when they are close enough to a susceptible person to cause infection? It is impossible. Many of them were told of their disease when it was incipient, and advised to go to a sanatorium. But, being burdened with responsibilities which their conscience would not permit them to drop, they worked on. These people deserve help, and the community deserves protection from them. Yet no law could force them into a detention hospital.

During the first six years that I visited the municipal sanatorium at Otisville, I examined all applicants for admission to that institution. In that time I saw many cases that fell within the category to which I have just referred. The patients were mostly worthy people. Their disease was too far advanced, in most cases, to permit admitting them to the sanatorium. Admission to a tuberculosis hospital in the city was offered and urged, but few accepted the offer. They remained, therefore, an active menace to their own families and to the community at large.

It is this gap, this link missing from the chain, which the sanatorium can fill, without impairing its other functions.

As we know, people so afflicted are a highly sensitive class. Their knowledge of conditions in a tuberculosis *hospital*, aided by a very active imagination, makes them rebel at the thought of going there to die. No amount of argument can persuade them to believe that they would ever improve in one of those hospitals. I must admit that I never really blamed them. I feel that I might act as they do, under similar circumstances.

On the other hand, they look to the sanatorium with hope, which we well know is half the battle. I am quite sure that the proverbial hopefulness of the tuberculous person is a conservative process on the part of the system, as much as is leukocytosis in septic infection.

The conditions for admission to the sanatorium at Otisville have never been so sharp and restricted as for many other sanatoriums, so that, when making the examinations, I admitted quite a number of patients fairly well advanced in the second stage and some in the third stage. In this way we were able to learn that a surprisingly large percentage of this group showed, after some months, improvement far beyond our expectation. Some even attained arrest of the disease. So striking were these results that Dr. Hermann M. Biggs, who was then my superior officer, and I decided to admit as many of this class of patients as our limited infirmary capacity would accommodate. I can also state that those of this number who did improve were always among our most grateful, well behaved and creditable sanatorium graduates.

All who have had extensive contact with persons afflicted with pulmonary tuberculosis, examining them while they were under their habitual city conditions, and again in the sanatorium, a week or so later, know how many of their worst symptoms are due to deleterious physical and mental influences in the city.

It is not possible to base the selection of sanatorium patients on pulmonary signs alone. This is so because some patients are very ill from the disease and well beyond a chance of recovery, or material benefit, from any treatment, who present very slight and indefinite physical signs. Elevations of temperature, severe cough, rapid pulse and marked digestive disorders are either, or all, sufficient to cause rejection under some requirements. Yet any, or all, of these and many other symptoms are frequently due solely to conditions involving the patient at the time of his examination.

We have all seen them disappear shortly after proper regimen, air, rest, food and hope—especially hope and renewed courage—have been established. All of these they know they will receive at the sanatorium.

Two conditions are necessary to do justice to these worthy patients and the community at the same time, through the agency of the sanatorium: (1) The examiner who makes the selection must have good human and medical judgment, and (2) sanatoriums now having only from 5 to 10 per cent. of their total beds in their infirmary must have from 15 to 20 per cent. infirmary capacity.

To avoid disturbance of present sanatorium conduct, standards and general cheerfulness, increase of infirmary capacity should be in the form and position of a new and separate unit—a reception unit. This should be well away from the units now existent, and near the entrance to the sanatorium grounds. It should comprise an infirmary building of several floors, two reception shacks, one small building containing two isolation rooms, and one small pavilion for nurses and help. It would be preferable if the reception unit were placed on a lower level, and not in clear view of the present units.

The infirmary in the reception unit should have a patient capacity of not less than 10 per cent. of the entire sanatorium. Its wards should be modified shack wings, or sleeping porches which could be closed in very severe weather. It should contain isolation rooms, surgical operating room, examining rooms, sleeping quarters for two physicians and two orderlies, and a necropsy room with facilities for storing pathologic specimens. It should contain a roentgen-ray laboratory, and, finally, should be equipped for cooking and serving food for all employees and patients of the unit.

The reception shacks should have a combined capacity of about 8 per cent. of the entire sanatorium.

There should be distinct separation, in this unit, between the women and children on one side, and the men and boys on the other.

All patients admitted to the sanatorium would go directly to the reception unit. They would be seen by a physician of the resident staff when they arrived. Their temperature, pulse and general condition would be determined and noted. This physician would then assign them to one of the reception shacks, or to the infirmary, as their condition indicated. Those admitted to shacks would remain there, under close observation and instruction, for two weeks. By this time a fair estimate of their condition and physical capacity would be obtained. They would then be transferred up the hill, to the sanatorium proper, with a brief memorandum to the physician in charge of their respective unit. Those patients who were not in satisfactory condition for transfer up the hill at the end of two weeks would be retained in the reception shack or transferred to the infirmary of the reception unit, according to the judgment of the resident physician; and later, when their condition warranted, they would be transferred up the hill to their proper unit. As fast as patients in the infirmary improved sufficiently to be up and about, they would be transferred up the hill. In the event of the development of any contagious disease in a new patient (and two weeks would give ample time), this patient would be at once placed in the isolation pavilion. In this way, the likelihood of the introduction of acute contagious diseases into the sanatorium would be reduced to a minimum.

Patients once up the hill, in their proper units, would never be transferred back to the reception infirmary, except for rare and extreme reason. In case of ordinary intercurrent illness, they would be cared for in the infirmary now in the units, which would be retained.

Thus, it is seen that the movement of patients would be always up hill, in the hopeful direction toward improvement and discharge. By this arrangement all deaths would occur in the infirmary of the reception unit, and in one of the isolation rooms. Once a patient was in his proper unit, such occurrences would not be brought to his attention. It could be arranged so that one of the resident staff would have some special training and experience in the performance of necropsies. It is undoubtedly true that permits could be obtained for necropsies in some extremely interesting cases. This postmortem study and evidence could be compared with recorded physical findings with great profit. As an aid to our knowledge of tuberculosis and the education of the staff, this admits of no discussion.

Municipal sanatoriums of large cities, where the great number of patients supplies unlimited opportunity for observation and study, should, in my opinion, be so complete in

the various stages of the disease and its complications, with facilities for studying it during life and at necropsy, that they would be virtually postgraduate schools, from which the entire community could draw competent and well versed experts. Every community is, in a measure, enriched according to the knowledge and experience of its physicians. And the fuller education of the sanatorium medical staff would be advanced materially by employment of the foregoing suggestions.

I do not wish to give the impression that this is the first plea I have made for the admission of patients with more advanced cases to the sanatorium. I have advocated this policy on several occasions and for several years. The chief argument raised against this suggestion has been that such patients would occupy beds which could return more good if filled by persons with incipient cases, which give more promise of cure or arrest of the disease. All I have said is in partial answer to this objection, but I will add two specific answers in addition.

1. Now, in 1917, and at many times in the years before, we have found that, in spite of the great number of cases of tuberculosis recorded in New York City, we have carried a number of vacant beds in the municipal sanatorium at Otisville for various reasons, some open to discussion, others obvious. But the fact remains that the beds are vacant.

2. It is, I believe, reasonable to assume that at least one in twenty, in other words 5 per cent., of sputum-negative patients, now in sanatoriums, have not tuberculosis as a clinical entity. It appears to be impossible to avoid this. And no specialist has seriously objected to the tenancy of this irreducible minimum of waste beds in the sanatorium. Yet these, with their sputum, if they raise any, always negative, are affording no relief to the community by remaining segregated. If it is fair to house and feed this 5 per cent. at public expense, is it not a thousand times more just to give a chosen number of conscientious persons, who are really sick, with positive sputum, a chance at sanatorium advantages, even if only 5 per cent., a very conservative figure, should attain arrest of their disease or marked improvement? Especially does this seem desirable since, as I have shown, it can be done without sacrificing any benefits now derived from the sanatorium.

Medicolegal

Physicians and the Practice of Osteopathy

(*State vs. Wood* (*Mont.*), *165 Pac. R. 592*)

The Supreme Court of Montana, in affirming a conviction of the defendant of practicing osteopathy without a license, says that the indictment stated that he was not a duly licensed practitioner of medicine and surgery. The practice of osteopathy in Montana is regulated by Sections 1594-1606, Revised Codes. A state board of osteopathic examiners is created, and every person who practices osteopathy in this state is required to secure from such board a license authorizing him to do so. But Subdivision b of Section 1605, which latter defines the practice of osteopathy, concludes: "Provided, however, that nothing in this section shall be construed to restrain or restrict any legally licensed physician or surgeon in the practice of his profession." If that is an exception, then a physician or surgeon is not within the prohibition of the penal statute, and may lawfully practice osteopathy as such in Montana without a license from the state board of osteopathic examiners. That this was not the intention of the lawmakers is practically a demonstrable fact. The practice of medicine and surgery is regulated by Sections 1585-1593, Revised Codes. Every person who practices medicine or surgery is required to secure a certificate from the state board of medical examiners, and every person who violates the statute is guilty of a misdemeanor. Section 1590 excepts from the provisions of the statute skilled and experienced midwives, commissioned surgeons of the Army and Navy in the discharge of their official duties, and physicians or surgeons, from other jurisdictions, in actual consultation here. Section 1591 defines "practicing medicine or surgery," and then proceeds: "Provided, however, that nothing in this section shall be construed to restrain or restrict any legally licensed osteopathic practitioner practicing under the laws of this state." A "physician or surgeon," within the meaning of these statutes, is one who has received from the state board of medical examiners a certificate authorizing him to practice medicine and surgery. An "osteopathic practitioner" is one who has received from the state board of osteopathic examiners a license authorizing him to practice osteopathy. In *State* vs. *Dodd*, 51 Mont. 100; 149 Pac. 481, this court considered these statutes at length, and concluded that the practice of medicine and surgery does not include the practice of osteopathy, and that the practice of osteopathy does not include the practice of medicine or surgery; that the legislature has grouped all persons practicing the healing art into two distinct classes, (1) physicians and surgeons, and (2) osteopathic practitioners, and that the so-called proviso added to Section 1591 above "did not affect the status of osteopathic practitioners in the least. They were confined thereafter, as theretofore, to the practice of osteopathy and forbidden to practice medicine or surgery without the certificate from the state board of medical examiners required of every one who seeks to engage in such practice." This court is more than ever confirmed in the correctness of those conclusions. The so-called proviso found in Section 1591, and the like provision in Section 1605b, were doubtless enacted out of abundance of caution and to emphasize the legislative intention that neither school of practice should be held to infringe on the other. Having determined that the provision in Section 1591 does not permit an osteopathic practitioner to practice medicine or surgery without a certificate from the state board of medical examiners, it follows that the compensating provision in Section 1605b does not permit a physician or surgeon to practice osteopathy without a license from the state board of osteopathic examiners, and, since the provision in Section 1605b does not exempt physicians or surgeons from the operation of the statute prohibiting the practice of osteopathy without the required license, it is not an exception within the meaning of that term as applied to statutory construction.

Chiropractic Versus Osteopathy—Evidence of Not Being Licensed Physician

(*State vs. Hopkins* (*Mont.*), *166 Pac. R. 304*)

The Supreme Court of Montana affirms a judgment appealed from by the defendant, who was convicted of a misdemeanor committed by engaging in the practice of osteopathy "under and by the name of chiropractic or chiropractor" for compensation without first having obtained a license from the state board of osteopathic examiners. The court says that, on a comparison of the definition of the expression "practicing osteopathy" found in Section 1605 of the Revised Codes with the accepted definition of the expression "practicing chiropractic," it is clear that the practice of the latter comes within the purview of the legislation. Since this definition is broad enough to include the system of chiropractic, the inference is necessary that the legislature intended to include it, whether or not it was a matter of common knowledge. That this definition includes the practice of chiropractic and applies to chiropractors is no valid objection to it. Counsel for the defendant insisted that chiropractic is not the same science or system as osteopathy, and that it is not reasonable to require a chiropractic who recognizes no similarity between the system he practices and osteopathy to pursue the course of study at a school of osteopathy as provided by the statute (Section 1598) and to be examined on the theory and practice of it. The mere difference in name, however, does not alter the fact that, whatever may be the distinction between the two as to the technical method of administering treatment, both administer it by the use of the hands. The spine is one of the parts of the body. The confinement by the chiropractor of his treatment principally to the spine does not excuse him from undergoing the ordeal

of the examination prescribed for osteopaths whose treatment includes the spine as well as all other parts of the structure of the human body. Because of the difference in name it cannot be said that the examination prescribed by the legislature has proper relation to the practice of osteopathy, while it has none to the practice of the chiropractic. In the judgment of the legislature, proficient knowledge of the anatomy and the other branches of science enumerated was deemed necessary to qualify an osteopath to treat the human body. If proficient knowledge of these sciences pertaining to the human body have no relation to the practice of chiropractic, which is nothing more nor less than osteopathy under another name, it is impossible to conceive what qualifications a practitioner of it should have. It was argued that the legislation is an attempt to restrict all healing by drugless treatment to a single school, and thus confer a monopoly on the school of osteopathy. This contention is without merit. The statute merely discloses that one using the method of treatment therein described shall be deemed practicing osteopathy, and that he must secure a license before he engages in the practice for compensation. If he does this, he has fully complied with the statute, and it is not material whether he chooses to style himself chiropractor or osteopath.

The information alleged that the defendant was not a duly licensed practitioner of medicine or surgery. Without stopping to inquire whether or not this allegation was material, the court deems it sufficient to say that, however the legislation relative to the practice of medicine has been changed otherwise, the provision relating to the keeping of the record and its value as evidence has been retained substantially as it was in the original act. The secretary of the board of medical examiners, who had in his possession in the courtroom the records of the board from the date of its first meeting up until the date of the trial, testified that the name of the defendant did not appear on the register of applicants to the board for a certificate or license. The record being identified as one required by law to be kept by an officer of the board, the presumption attached that it had been correctly kept. It was therefore prima facie evidence that the defendant was not licensed to practice medicine or surgery. This was sufficient to send the case to the jury.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

December, 1917, **154**, No. 6

1 Broader Aspects of Hematologic Diagnosis. E. E. Butterfield and R. G. Stillman, New York.—p. 783.
2 *Coagulation Time of Blood of Tuberculous Patients. N. B. Burns and A. E. Young, Boston.—p. 797.
3 *Subacute and Chronic Nontuberculous Pulmonary Infections. J. A. Miller, New York.—p. 805.
4 Reactions to Altitude in Tuberculous. D. C. Twichell, Albuquerque, N. M.—p. 827.
5 Cases of Paroxysmal Tachycardia in Children. H. Koplik, New York.—p. 834.
6 *Medical Aspect of Gastro-Enterostomy. H. S. Carter, New York. —p. 851.
7 Studies in Fractional Estimations of Stomach Contents. B. B. Crohn and J. Reiss, New York.—p. 857.
8 *Action of Opium and Some of Its Alkaloids on Digestive Tract. D. I. Macht, Baltimore.—p. 874.
9 Renal Infection; Analysis of One Hundred and Ten Cases. J. F. Geisinger, Richmond, Va.—p. 883.
10 *Banti's Disease. C. Norris, D. Symmers and L. Shapiro, New York.—p. 893.

2. **Coagulation Time of Blood in Tuberculosis.**—One hundred and twenty patients yielded 132 specimens of blood for the estimation of coagulation time. Of these patients 8 were probably nontuberculous. The rest were afflicted with pulmonary tuberculosis, 73 being open and 47 closed cases. Of the 120 patients, 54 per cent. gave histories of hemoptysis. The average clotting time was seven minutes, forty-five seconds. A substudy of 24 cases was made. Twelve patients with recent hemoptysis showed coagulation times increased in several instances and in average time eight minutes, thirty seconds. Twelve patients without hemoptysis and with disease processes parallel to those of the patients in the first group showed coagulation times increased in as many instances as among those of the first group. The average was the same, eight minutes, thirty seconds. No attempt was made to show the results of medication with calcium salts.

3. **Nontuberculous Pulmonary Infections.**—Miller analyzes 22 cases with very definite localized physical signs in the chest closely simulating pulmonary tuberculosis, the diagnosis of which disease has frequently been made, but in which a close study of the clinical findings and the subsequent course did not seem to justify this conclusion. Nine of the 22 cases were of the subacute type; 6 were cases of the subacute type with recurrences and 7 were cases of the chronic type. Of the 22 cases 8 were males and 14 females. The age incidence at the time of first observation varied from seven to sixty years, with the majority in full adult life, that is, from 30 to 50 years. The location of the physical signs was in the left lower lobe in 13 cases, in the right lower in 5, in both lower lobes in 3, and in the entire right lung 1. Cough and expectoration were the predominating features in all cases. Pleurisy was not a frequent finding (3 cases). Frank hemoptysis occurred in 2 cases and bloody sputum at times in 4 others. Very numerous and repeated examinations for tubercle bacilli were made in all cases, with negative results. Eighteen cases of the entire series were studied by means of the roentgen ray. The most striking feature was the insignificant changes shown when compared with the extent of the physical signs.

The chief points which serve to distinguish these cases from tuberculosis are: 1. Complete absence of severe constitutional symptoms, with the retention of excellent general condition in spite of the presence of extensive lesions. 2. The localization of the lesion with almost constant uniformity in one or both of the lower lobes. 3. The disappearance of all physical signs within a few months in the subacute cases. 4. The lack of progression of the lesion to other parts of the lungs. 5. The absence of tubercle bacilli in the sputum over long periods of time and the presence of other infectious organisms in predominating numbers. 6. The character of the roentgenogram which in these cases shows either nothing abnormal or very slight changes.

6. **Medical Aspect of Gastro-Enterostomy.**—Carter urges that all cases of gastro-enterostomy should be given, postoperative, a regular ulcer diet, giving the old ulcer the most favorable opportunity to heal and preventing irritation elsewhere, notably at the site of the new opening, surrounded as it is by tender and vascular mucous membrane, or opposite the stoma.

8. **Action of Opium on Digestive Tract.**—The practical deductions to be drawn from Macht's investigation are, first, that morphin alone is more nauseating than when given in combination with other opium alkaloids; second, that even minute doses of morphin, insufficient for the relief of pain, may nevertheless produce nausea. It is therefore not logical to decrease the dose of morphin for the purpose of eliminating its nauseating effect. Absorption from the stomach does not seem to be interfered with by morphin and opium. The secretions of the stomach are, however, markedly decreased. Morphin, after having been absorbed from the intestines, is reexcreted by the gastric mucosa. This suggests lavage as a rational procedure in all cases of opium or morphin poisoning. The most striking effect of morphin on the stomach is the powerful tonic contraction of the pylorus, which lasts for many hours. Opium, or the total opium alkaloids, does not or do not produce such a powerful spasm of the pylorus. The decrease in secretion and the pylorospasm are in large measure responsible for the indigestion following the administration of morphin.

While the action of morphin on the Auerbach and Meissner plexuses tends to stimulate the intestinal contractions, some of its other effects on the intestine tend to counteract this stimulation and inhibit the contraction, and still other effects, by producing changes in the consistency of the feces, tend still further to lead to constipation. The fact that small doses of papaverin and narcotin are sufficient to counteract

the stimulating action of morphin and codein explains the empirical observation that opium is more constipating than morphin. Experiments made by the author with pantopon, a combination which contains 50 per cent. of morphin, proved that it possessed enough of the isoquinolin derivatives to produce an inhibition of the bowel in place of the ordinary stimulation following morphin alone.

10. **Banti's Disease.**—Inasmuch as the so-called Banti's disease is neither an independent clinical nor anatomic entity, the authors urge that the designation should be eliminated from the nomenclature of splenic pathology, since it not only carries with it the objections customarily urged against the surnamed diseases, but is in reality a manifestation of visceral syphilis. In 4,880 necropsies at Bellevue Hospital, cirrhosis of the liver occurred seventy-four times in 314 syphilitic subjects, and there was an associated splenomegaly of marked proportions in forty-eight. The histologic changes in the spleen in the condition described by Banti are identical with those due to syphilis.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December, 1917, **76**, No. 6

11 *Unilateral Defect of Tube and Ovary, Study in Prenatal Pathology. G. Gellhorn, St. Louis.—p. 877.
12 *Uterine Fibroids, Their Tendency to Become Sarcomatous. F. Warner, Columbus, Ohio.—p. 888.
13 Technic of Total Hysterectomy for Nonmalignant Conditions. R. Worrall; Sydney, N. S. W.—p. 894.
14 Influence of Oxygen on Liver Necrosis (Chloroform Poisoning). H. R. Spencer, Baltimore.—p. 898.
15 Importance of Eye-Ground Examination in Infants After Difficult Delivery with or Without Instruments. J. A. Kearney, New York.—p. 904.
16 Indications in Obstetric Surgery. E. M. Lazard, Los Angeles.—p. 909.
17 Maternal and Fetal Blood During Pregnancy and Puerperium. W. D. Fullerton, Cleveland.—p. 918.
18 Average Birth Weight in Two Thousand Confinements. S. P. Warren, Portland, Maine.—p. 932.
19 *Gallbladder Disease Complicating Disease of Internal Genitalia. J. H. Carstens, Detroit.—p. 936.
20 Gallbladder Surgery. J. H. Branham, Baltimore.—p. 940.
21 *Left Fallopian Tube and Intestinal Stasis. D. H. Stewart, New York.—p. 943.
22 Case of Megacolon. T. B. Noble, Indianapolis.—p. 946.
23 Treatment of Appendicular Abscess. W. A. B. Sellman, Baltimore.—p. 950.
24 Leftsided Appendicitis in Situs Inversus Viscerum Totalis. J. H. Jacobson, Toledo, Ohio.—p. 953.
25 *Thyroid in Gynecology. H. E. Hayd, Buffalo.—p. 958.
26 Interrelationship of Female Sex Glands and Pituitary Body. J. E. King, Buffalo.—p. 964.
27 Diagnosis, Treatment and Management of Surgical Conditions Complicating Process of Generation. B. C. Hirst, Philadelphia.—p. 971.
28 Fetal Dystocia as Indication for Operative Delivery. Relative Propriety of Such Procedures as They Affect Interests of Mother and Infant. J. A. McGlinn, Philadelphia.—p. 977.
29 Diagnosis and Treatment of Gallstones. G. T. Vaughan, Washington, D. C.—p. 982.
30 The McDonald Solution. C. S. White and O. Hunter, Washington, D. C.—p. 986.
31 Case of Pellagra in Child Residing in District of Columbia. J. Foote, Washington, D. C.—p. 1023.
32 Minor Neuroses of Childhood. J. Epstein, New York.—p. 1027.

11. **Unilateral Defect of Tube and Ovary.**—During a laparotomy on a girl of 19, whose sexual characteristics were normally developed, the total absence of the left tube and ovary and of the left broad ligament was accidentally discovered by Gellhorn. The uterus possessed a perfectly normal configuration. The right adnexa were inserted at the uterine horn. The right round ligament was present only in a rudimentary form. Chromocystoscopy revealed the absence of a ureteral opening on the left side, which suggested absence of the left kidney. Gellhorn suggests that the etiologic factors are either torsion of the adnexa or fetal inflammation.

12. **Sarcomatous Degeneration of Uterine Fibroids.**—The frequency of sarcomatous association with the uterine fibroids in Warner's series of 100 consecutive specimens, was 2 per cent., but one carcinoma was encountered in the entire series.

19. Abstracted in THE JOURNAL, Oct. 27, 1917, p. 1466.

21. Abstracted in THE JOURNAL, Oct. 20, 1917, p. 1378.

25. Abstracted in THE JOURNAL, Oct. 27, 1917, p. 1466.

Annals of Medical History, New York

July, 1917, **1**, No. 2

33 Hygiene in World History. K. Sudhoff.—p. 111.
34 Patronal Festival for Thomas Willis. H. Viets, Newton, Mass.—p. 118.
35 Medicine and Mathematics in Sixteenth Century. D. F. Smith, New York.—p. 125.
36 Historical Development of Our Knowledge of Circulation and Its Disorders. P. S. Roy, Washington, D. C.—p. 141.
37 Jetons of Old Paris Academy of Medicine in Numismatic Collection in the Army Medical Museum at Washington, D. C. A. Allemann.—p. 155.
38 History of Infection. A. C. Klebs, Washington, D. C.—p. 159.
39 Beginnings of Intravenous Medication. H. M. Brown, Milwaukee, Wis.—p. 177.
40 Legislative and Administrative History of Medical Department of U. S. Army During Revolutionary Period (1776-1786). W. O. Owen, Washington, D. C.—p. 198.
41 William Shippen's First Draft of Organization of Military Hospital During Revolution.—p. 174.

Annals of Surgery, Philadelphia

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42 *Studies in Bone Regeneration by Means of Vital Stain. B. Brooks, St. Louis.—p. 625.
43 Complete Mastoid Operation; Its Relation to Modern Healing of Mastoid Wounds. H. B. Blackwell, New York.—p. 640.
44 *Dislocation of Cervical Vertebrae. K. Speed, Chicago.—p. 644.
45 *Tuberculosis of Appendix. J. R. Scott, Washington, D. C.—p. 648.
46 Obstruction of Ureter. J. F. Geisinger, Richmond, Va.—p. 654.
47 Gastric and Duodenal Ulcers from Surgical Point of View. A. Troell, Stockwell, Sweden.—p. 664.
48 *Annular Segmental Gastrectomy. W. H. Barber, New York.—p. 672.
49 Stricture of Gallbladder; Report of Case. W. F. Fowler, Rochester, N. Y.—p. 679.
50 Tumors of Bladder; Report of Twenty-six Cases. H. W. E. Walther, New Orleans.—p. 682.
51 Inguinal Hernia in Male. S. Erdman, New York.—p. 702.
52 Fractures of Os Calcis; Report of Seventy-two Cases. G. F. Cahill, New York.—p. 711.
53 Anatomic and Experimental Study of Sacral Anesthesia. J. E. Thompson, Galveston, Texas.—p. 718.

42. **Studies in Bone Regeneration.**—This experimental study of bone regeneration from bone transplants is based on the use of sodium alizarin sulphonate as a vital stain for new bone. The experimental method was the same in all experiments. Dogs were used as the experimental animals. The operations were all done under complete ether anesthesia. The aseptic precautions were such that infection of the operation wounds did not occur in any instance. A defect in the shaft of the ulna was produced by the excision of 20 to 40 mm. of the bone with its periosteum. The bone transplant or implant was placed in the defect of the ulna. In most experiments the bone transplant or implant was fixed in the medullary canals of the fragments of the resected bone. Living bone transplants were always obtained from the femur. These experiments show conclusively that a defect in the shaft of a bone may be quickly and completely regenerated after placing within the defect an autotransplant of living bone with periosteum and endosteum. There is a question whether the transplanted bone matrix and bone cells retain their viability for a short period of time, but there is no question that the identity of the transplanted bone is ultimately lost as a result of absorption and replacement by new bone. If the periosteum and endosteum together with the adjacent layers of bone are removed from the transplant, it has no osteogenetic properties. If an implant of sterile dry bone is placed in a defect in the shaft of a bone there is no evidence that such an implant aids in any way the regeneration of the defect. The implanted dead bone neither results in a metaplastic production of bone from the surrounding tissue nor does it possess any specific property of conducting bone growth across the defect in the bone shaft. These facts clearly indicate that the living bone transplant with the periosteum and endosteum is the only type of implant which has osteogenetic properties.

44. **Dislocation of Cervical Vertebrae.**—Speed reports two instances completely reduced manually without anesthesia. One case was a dislocation of the fifth cervical vertebra, rotatory in type, the left side having moved forward, the right side slightly backward. Placing the patient in a sitting position in bed, grasping the head beneath the occiput and chin,

Speed was enabled, by forcible extension which nearly lifted the patient's whole body weight, to make rotation and correct the deformity. A very slight jar was perceptible when the head was released; it returned to its former deformed position, without any snapping sound or subjective sensation, and without increased pain. Speed repeated the manual reduction twice but with the same result. A month afterward a plaster-of-Paris encasement was applied to hold the head in a slightly overcorrected position with some extension. In the second case the roentgenogram demonstrated a rotatory dislocation displacement of the third cervical forward on the right side, unilateral in character. By the same maneuver of traction on occiput and chin, followed by rotation during its maintenance, Speed established a complete reduction without palpable jar. The head was then moved over into a slightly overcorrected position and a plaster dressing was applied. Four weeks later the patient returned, the cast was removed, and immediately the patient was able to move the head and neck freely without pain or recurrence of deformity.

45. **Tuberculosis of Appendix.**—Scott claims that about 0.5 per cent. of all appendixes removed surgically are tuberculous. He had one case in 179 appendixes examined. The diagnosis rests on the demonstration of an afternoon temperature, progressive weight loss, evening sweats and pain and tenderness in the right lower quadrant. The prognosis is unfavorable except in the very rare primary forms of the disease. It is best in the hyperplastic form. The treatment is operative whenever possible. Active pulmonary lesions contraindicate operation.

48. **Annular Segmental Gastrectomy.**—The removal of an annular segment from the stomach in Barber's opinion leaves the stomach with greater emptying power than the removal of a saddle-shaped section from the lesser curvature.

Boston Medical and Surgical Journal

December 27, 1917, **177**, No. 26

54 *Radium Treatment of Carcinoma of Cervix at Huntington Hospital. E. H. Risley and G. A. Leland, Jr., Boston.—p. 891.
55 Normal Weight. H. Gray and K. M. Gray, Boston.—p. 894.
56 Immoral Woman as Seen in Court; Preliminary Report. V. V. Anderson, Boston.—p. 899.
57 Differentiation of Psychotic from Neurotic Conditions. D. Gregg, Wellesley.—p. 904.
58 Urobilin Content of Feces as Measure of Rate of Blood Destruction. F. H. McCrudden, Boston.—p. 907.
59 Pulmonary Puzzles. J. B. Hawes, 2d, Boston.—p. 912.
60 Diagnostic Importance of Recognizing Absense of Epileptic Make-Up in States Simulating Idiopathic Epilepsy. L. P. Clark, New York.—p. 915.
61 Use of Hemostat in Tonsil Operation. J. Prenn, Boston.—p. 917.

54. **Radium Treatment of Cervix Carcinoma.**—This is a report of the results obtained in the treatment with radium of a series of 113 cases of carcinoma of the uterus at the Huntington Hospital from January, 1912, to June, 1916, inclusive. The points of interest and value brought out in this analysis are as follows: Much symptomatic relief can be expected from radium treatment, especially in the checking of hemorrhage and alleviation of pain. Prophylactic radiation immediately following hysterectomy is a logical, safe and advisable procedure and should reduce the number of recurrences. The treatment of early recurrences offers a fair prognosis. Late treatment offers little but alleviation of symptoms and but little retardation of growth. Inoperable cases are benefited by radium and the period of life is somewhat prolonged. Radium should be given more extended and earlier trial in these cases. It is believed that every case operated on should be required to report for observation once a month for the first year and once in three months for the second year, and at frequent intervals for each succeeding year. Only in this way can early recurrences be detected and early institution of radium treatment be started.

Colorado Medicine, Denver

December, 1917, **14**, No. 12

62 Cancer and Its Surgical Treatment. A. D. Bevan, Chicago.—p. 317.
63 Unusual Form of Acute Nephritis Secondary to Focal Infection. C. B. Van Zant, Denver.—p. 325.
64 Local Treatment of Furuncles. H. B. Whitney, Denver.—p. 328.

Georgia Medical Association Journal, Augusta

December, 1917, **7**, No. 8

65 Extra-Uterine Placental Growth. A. J. Mooney, Statesboro.—p. 155.
66 Case of Superfetation. J. C. Logan, Plains.—p. 158.
67 Hyperpressure. S. R. Roberts, Atlanta.—p. 159.
68 Dietetic Management of Typhoid. J. E. Paullin, Atlanta.—p. 165.
69 Treatment of Infantile Paralysis. F. G. Hodgson, Atlanta.—p. 168.
70 Primary Heart Strain. J. H. Honan, Augusta.—p. 171.

Journal of Cutaneous Diseases, Chicago

December, 1917, **35**, No. 10

71 Pathology of Mycosis Fungoides. J. F. Fraser, New York.—p. 793.
72 Hypertrichosis. E. L. McEwen, Chicago.—p. 829.
73 Preoperative Reduction of Epithelioma by Roentgen Rays or Radium. D. W. Montgomery and G. D. Culver, San Francisco.—p. 837.

Journal of Infectious Diseases, Chicago

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74 *Studies on Blood Proteins. Albumin-Globulin Ratio in Antitoxic Immunity. K. F. Meyer, S. H. Hurwitz and L. Taussig, San Francisco.—p. 1.
75 *Effects of Roentgen Ray on Antibody Production. L. Hektoen, Chicago.—p. 28.
76 Experimental Trypanosomiasis: T. Equiperdum Infection in Dog. E. B. Krumbhaar, Philadelphia.—p. 34.
77. Complement Fixation in Experimental Trypanosomiasis. A. C. Woods and H. H. Morris, Philadelphia.—p. 43.
78 Stability of Erythrocytes of Ox, Pig and Sheep. M. W. Lyon, Jr., Washington, D. C.—p. 49.
79 *Use of Monilia Vaccine in Treatment of Sprue. C. Michel, Porto Rico.—p. 53.
80 *Active Immunity to Systematic Plague Infection. F. Eberson.—p. 62.
81 Streptococcus in Acute Epidemic Respiratory Infection of Horses. G. Mathers, Chicago.—p. 74.
82 Antipollen Serum for Standardization of Pollen Antigen. R. O. Clock, New York.—p. 80.
83 *Allergic Phenomena Following Intraportal Injections. F. H. Falls, Chicago.—p. 83.
84 *Microscopic Demonstration of Cocci in Central Nervous System in Epidemic Poliomyelitis. L. Hektoen, G. Mathers and L. Jackson, Chicago.—p. 89.
85 *Inhibitive Effect of Ox-Bile on B. Typhosus. E. E. Ecker, Chicago.—p. 95.

74. **Albumin-Globulin Ratio in Antitoxic Immunity.**—The evidence gained by the authors from their experiments with soluble toxins of diphtheria, tetanus and botulism toxin supports the contentions which they presented in a previous paper on the relation between blood globulins and bacterial infection and immunity. In general, the observations permit of the conclusion that no constant relation exists between the extent of serum globulin increase and the antitoxic content of the serum.

75. **Roentgen Ray and Antibody Production.**—In these experiments the radiation was always made with the Coolidge tube, the focal distance always 8 inches, the current 5 to 6 milliamperes, spark-gap 8 inches. Young animals were used. As a rule two exposures were made, a major, followed by one, one fourth as long the next day immediately before the injection of the antigen. Only one injection of antigen was given. In the dog, the antibodies measured were the agglutinin and opsonin for rat corpuscles and the lysin for goat corpuscles; in the rabbits, the titers of the lysin for sheep corpuscles and of the precipitin for sheep blood proteins were determined. Hektoen found that exposure may restrain in high degree, and under some conditions, completely, the production of antibodies as measured by the antibody content of the serum. When antibody production is at or near its height, exposure to the roentgen ray appears to have but little if any effect on the antibodies in the blood, and at this time dogs appear to have an increased resistance to the effects of the ray just as rabbits in the period of active production of antibodies have an increased resistance to effects of benzene. The results obtained from these observations harmonize with the view that antibodies are produced in the spleen, lymphatic tissues, and marrow, as these structures suffer most directly from the action of the roentgen ray; they indicate also that one reason why the lymphocyte appears to be an important agent of defense in tuberculosis and other conditions may be its power to form antibodies and that the rapid development of tuberculosis in roentgen-rayed guinea-pigs may depend, at least in part, on interference with antibody production.

79. **Monilia Vaccine in Sprue.**—Of eighty-one cases in Michel's care sixty-two patients have completed the vaccine treatment. All cases were diagnosed by Ashford. and *Monilia psilosis* was isolated from the feces. In all these cases the complement fixation test was positive. The diet was regulated so as to fit each individual case. The only medication given was to stimulate digestion. Americans responded very quickly to the treatment and required a shorter time than Porto Ricans. Of the sixty-two patients, forty-nine were discharged cured, twelve were improved, and one died of acute nephritis.

80. **Active Immunity to Systemic Plague Infection.**—The materials used by Eberson in the production of proteotoxins were *B. pestis,* antipest serum from rabbits injected with plague bacteria and normal horse serum. The treatment of rabbits with these proteotoxins conferred a definite resistance to systematically introduced plague organisms in at least 75 per cent. of the animals treated. Combined intravenous and intraperitoneal injections of the proteotoxin seem to be more effective than either method by itself, although intraperitoneal treatment of rabbits results in a powerful resistance to plague bacteria administered by that route. The immunity, so far as it has been possible to determine in these experiments, is definitely marked for at least one month after treatment. Injections given at intervals of two to three weeks give rise to a definite resistance to inoculation with living virulent plague bacilli. *B. pestis* appears to be the matrix for a specific poisonous substance of the nature of proteotoxin, and capable of inducing a specific resistance to the organism which is used in the manufacture of the toxic element. Observations so far support the hypothesis that one of the most potent factors in the protective mechanism is that of leukocytosis.

83. **Allergic Phenomena After Intraportal Injection.**—Fall's experiments show that guinea-pigs may be sensitized by intraportal injections of human serum. Anaphylactic shock may be evoked after the usual latent period by subsequent intraportal injection. Guinea-pigs may be sensitized by intraportal injections and shocked by peripheral intravenous injections of human serum. Conversely, guinea-pigs may be sensitized by intraperitoneal injections and shocked by intraportal injections. Larger doses are necessary to produce anaphylactic shock in guinea-pigs when the shock dose is administered intraportally, irrespective of the method of administration of the sensitizing dose. Passive anaphylaxis may be transmitted to guinea-pigs by way of the portal system and shock may be produced by portal or peripheral injections. Here again, however, larger doses seem necessary to produce shock when administered by the portal system. Human serum sensitizes and produces anaphylactic shock in the guinea-pig. It is, however, not without toxic effect on nonsensitized guinea-pigs as shown by the fact that 1.5 c.c. intrajugularly caused death in four minutes with symptoms of anaphylactic shock, the same amount introduced intraportally producing toxic symptoms but not death.

84. **Cocci in Nervous System in Poliomyelitis.**—In order to determine so far as possible whether coccal forms are demonstrable microscopically in the central nervous system in poliomyelitis as it occurs in different places, the authors obtained from various sources fixed poliomyelitic material, mostly pieces of spinal cord, which they studied. In all, material from fifty-seven cases has been studied. Except in a few instances, changes characteristic of epidemic poliomyelitis were present, most markedly in the gray matter, particularly the anterior horns, and in some cases, but to a much less extent, also in the membranes. Definite coccal forms were found rather easily in sections showing typical poliomyelitic changes. They were single, oftener in pairs, occasionally in small clumps, usually outside but also within cells. They were located in the gray matter, in the walls of the blood vessels, in perivascular and other infiltrates, and in hemorrhagic areas; they were found also in meningeal infiltrations. These cocci correspond in general, so far as shape and size and staining by Gram's method are concerned, with the cocci recently isolated in cultures of the central nervous system in epidemic poliomyelitis.

85. **Inhibitive Effect of Ox-Bile on B. Typhosus.**—Ecker's observations show that bile has a distinct inhibitive effect on the growth of typhoid bacilli. This inhibition can be reduced to a certain extent by the addition of glycerol.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December, 1917, **10,** No. 6

86 *Therapeutics of Amebic Dysentery. H. H. Dale and C. Dobell, London.—p. 399.
87 *Salicylates. Question of Salicyluric Acid in Salicyl Urines. P. J. Hanzlik, Cleveland.—p. 461.

86. **Therapeutics of Amebic Dysentery.**—Dale and Dobell used kittens artificially infected with *E. histolytica* from man in their work. Experimental dysentery in kittens was refractory to all kinds of treatment. Neither the ipecacuanha alkaloids, nor other substances having a powerful action on the amebae in vitro, could cure the infection or definitely modify its course. Certain samples of *E. histolytica* survived the action of 1 in 1,000 and even 1 in 100 emetin, for periods up to one hour. Amebae which survived treatment by 1 in 1,000 emetin were found to be still capable of infecting kittens. Methyl-psychotrine, a natural alkaloid from ipecacuanha, which is more toxic for *E. histolytica,* when tested clinically on cases of amebic infection in man, appeared to be entirely devoid of therapeutic action, though given relatively very large doses. On the basis of these results it is suggested by the authors that the theory of the mode of action of emetin in amebic dysentery needs reconsideration and that the therapeutic efficacy of emetin is a result of its action on the host rather than on the parasite.

87. **Salicyluric Acid in Salicyl Urines.**—From Hanzlik's experiments it appears improbable that salicylates are converted into salicyluric acid in the human and animal organism.

Kansas Medical Society Journal, Topeka

December, 1917, **17,** No. 12

88 Excision of Hemorrhoids Under Local Anesthesia. E. E. Morrison, Great Bend.—p. 321.
91 Home Service Work of American Red Cross. A. Fairbanks, Topeka.—p. 323.
89 Pink Eye. O. R. Wolfe, Beverly.—p. 323.
90 Nitrous Oxid in Obstetrics. L. B. Spake, Kansas City.—p. 326.

Medical Record, New York

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92 King's Evil and Its Relation to Psychotherapy. M. A. Starr, New York.—p. 1103.
93 Focal Sepsis as Cause of Diseases of Respiratory and Gastro Intestinal Systems. C. C. Browning, Los Angeles.—p. 1106.
94 Primitive Dietary Laws. J. H. Marcus, Atlantic City, N. J.—p. 1111.
95 Bladder Tumors; Report of Cases. J. U. Reaves, Mobile, Ala.—p. 1115.
96 Sublingual Medication. B. Robinson, New York.—p. 1117.

New Orleans Medical and Surgical Journal

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97 Treatment of Typhoid. L. F. Salomon, New Orleans.—p. 488.
98 Cripples Who Should Not Be. J. T. Nix, Jr., New Orleans.—p. 494.
99 Occurrence of Clonorchis Sinensis in Eastern Cuba. P. L. Querens, New Orleans.—p. 500.

West Virginia Medical Journal, Huntington

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150 Dementia Praecox. L. V. Guthrie, Huntington.—p. 201.
151 Acute Poliomyelitis. A. S. Bosworth, Elkins.—p. 208.
152 Communicability of Poliomyelitis. H. L. Amoss, New York.—p. 209.
153 Poliomyelitis Epidemic in Marion County, West Virginia, July 26 to October 7, 1917. P. Noe, Jr., New York.—p. 214.

New York Medical Journal

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100 Removal of Steel Particles from Interior of Eye by Magnet. F. Allport, Chicago.—p. 1205.
101 Care of Eyes. A. E. Davis, New York.—p. 1208.
102 Exophthalmic Goiter; Statistics of Philadelphia. C. S. Miller, Philadelphia.—p. 1210.
103 Childbirth and Its Ancient Customs. J. H. Marcus, Atlantic City, N. J.—p. 1213.
104 Lateral Sinus Thrombosis; Five Cases Without Symptoms. A. S. Kaufman, Philadelphia.—p. 1216.

105 Report of Experimental Work in Production of Antituberculous Serum. M. Staller, Philadelphia.—p. 1219.
106 Physical Training and Hygiene for Busy People. L. F. Fuld, New York.—p. 1222.
107 Frozen Feet, or Trench Foot, So-Called. H. Authelain, France.—p. 1225.

New York State Journal of Medicine

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108 Peptic Ulcer. J. B. Deaver, Philadelphia.—p. 529.
109 Symptomatology of Peptic Ulcer. G. R. Lockwood, New York.—p. 535.
110 Treatment of Peptic Ulcer. L. Kast, New York.—p. 538.
111 Roentgen Ray in Peptic Ulcer. L. G. Cole, New York.—p. 542.
112 Elliot's Operation: Complications and Unfavorable Results. W. G. M. Byers, Montreal.—p. 545.
113 Irritable Bladder in Women. G. W. Stark, Syracuse.—p. 549.
114 Causes of Urinary Frequency in Young Men. E. M. Watson, Buffalo.—p. 532.
115 Some Aspects of Internal Hydrocephalus. C. G. Leo-Wolf, Buffalo.—p. 555.

Pennsylvania Medical Journal, Athens

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116 Two Cases of Sarco-Endothelioma. A. R. Matheny, Pittsburgh, and A. B. Wallgren, Wilkinsburg.
117 Pyelitis Complicating Pregnancy. H. A. Miller, Pittsburgh.—p. 145.
118 Pyelitis. R. K. Rewalt, Williamsport.—p. 148.
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121 Meningitis; Different Forms and Their Diagnosis. E. E. Graham, Philadelphia.—p. 158.
122 So-Called Habit Spasm (Tic) and St. Vitus' Dance. C. W. Burr, Philadelphia.—p. 163.
123 Ulcer Treatment Based on Experimental Data. M. E. Rehfuss, Philadelphia.—p. 168.
124 Social and General Care of Gastro-Intestinal Cases in Dispensary. A. A. Howell, Philadelphia.—p. 174.
125 Pharmacology and Therapeutics of Ductless Gland Preparations. C. E. de M. Sajous, Philadelphia.—p. 178.
126 Some Beneficial Results of School Medical Inspection. W. W. McFarland, Pittsburgh.—p. 184.
127 Case of Ectromelus, of Partial (Hemimelus) Type. T. M. M. Flynn, Erie.—p. 187.

Southern Medical Journal, Birmingham, Ala.

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128 World's War—Our Duty in Present Crisis. D. Eve, Nashville, Tenn.—p. 911.
129 French Sanitary Service. C. U. Dercle, Washington, D. C.—p. 917.
130 Needs of Medical Service. R. E. Noble, Washington, D. C.—p. 922.
131 Proper Organization of Medical Profession of Nation at War, with Moving Pictures. W. O. Owen, Washington, D. C.—p. 926.
132 Tuberculosis in Army. G. E. Bushnell, Washington, D. C.—p. 933.
133 Uncinariasis. C. C. McCulloch, Washington, D. C.—p. 938.
134 American Red Cross. C. H. Connor, Washington, D. C.—p. 948.
135 Medical Preparedness for National Defense. F. F. Simpson, Washington, D. C.—p. 951.

Surgery, Gynecology and Obstetrics, Chicago

January, 1918, **26**, No. 1

136 *Operative Indications in Hour-Glass Stomach; Report of Seventeen Cases. W. A. Downes, New York.—p. 1.
137 *Treatment of War Wounds; Aseptic and Open-Air Treatment as Compared with Antiseptic Treatment. F. A. Besley.—p. 8.
138 Production and Transplantation of Double Faced and Combined Flaps; Report of Case. N. A. Ludington, New Haven, Conn.—p. 13.
139 Study of Postoperative Pneumonitis. A. O. Whipple, New York.—p. 29.
140 Chronic Surgical Prostatitis. B. A. Thomas, Philadelphia.—p. 47.
141 *Military Surgery During One Year's Service in Twenty-third General Hospital, B. E. F., France. J. M. Neff and J. G. O'Malley, Chicago.—p. 51.
142 Cysts of Hypophysis; Report of Cases. A. B. Kanavel and H. Jackson, Chicago.—p. 61.
143 Cases of True Prostatic Calculi. H. L. Kretschmer, Chicago.—p. 70.
144 Repair and Reconstruction of Hepatic and Common Bile Ducts; Report of Cases. E. Eliot, Jr., New York.—p. 81.
145 Repair of Tendons in Fingers and Description of Two New Instruments. S. Bunnell, San Francisco.—p. 103.
146 *Fate of Cystic Duct After Cholecystectomy. D. N. Eisendrath and H. C. Dunlavy, Chicago.—p. 110.
147 Removal of Portion of Sternum for Ligation of Innominate Artery; Report of Two Cases. W. T. Coughlin, St. Louis.—p. 112.
148 Simplified Skin Grafting. R. Durham, Brooklyn.—p. 117.
149 Postoperative Therapeutics of Surgical Infections. G. Cocci, Arezzo, Italy.—p. 120.

136. **Operative Treatment in Hour-Glass Stomach.**—Downes says that gastroplasty is suitable only for cases in which the pouches are movable, their walls free from induration, and the constricted area narrow. Gastrostomy is especially adapted to the cases in which the stomach is adherent along its lesser curvature to the liver, in which the pouches are relatively large, nearly equal in size, and can be approximated at their dependent portions. Mediogastric resection or resection in continuity is the ideal operation for hour-glass deformity of the stomach provided the pylorus is not stenosed, and should be performed in all suitable cases. The end-results obtained demonstrate the value of this procedure. Unfortunately, it is limited to the cases with few adhesions in which the pouches are fairly large, and permit of free mobilization. Midgastric resection was the method adopted by Downes in five cases. In three a perfect result seems to have been obtained. All symptoms referable to the stomach have disappeared. The fourth patient continues to have some distress in her stomach after meals although there has been no vomiting. She has gained in weight and has continued her work. The fifth patient died of pneumonia on the sixth day after operation.

137. **Treatment of War Wounds.**—As Besley's experience in war surgery grows, he becomes more and more impressed that maintaining the nutrition of the cell is the most essential factor in increasing its resistance. One of the most important and essential elements in the treatment of fresh wounds is the time element. Wounds with small entrance and exit may be treated with a dry dressing and not disturbed, and in a large proportion of the cases there will be little or no tissue reaction that will require further treatment. Large wounds, inflicted by an irregular missile, where the edges are contused or lacerated to a greater or less degree, should be treated by an early and thorough excision of all ragged or detached bits of tissue that have come in contact with and been soiled by foreign materials. It is customary to apply to such wounds a 4 or 5 per cent. solution of iodin. The all important principle is to excise all tissue the nutrition of which is questionable, or which has been contaminated. The wound can then be sutured and a very large percentage of these wounds will heal by first intention. In the case of deep wounds of the thigh, it is better to insert sutures at the time of primary excision and tie them within forty-eight hours, if there be no reaction.

Besley is strongly opposed to packing these freshly infected wounds with gauze. In exceptional cases, soft rubber tissue may perhaps be used to advantage. "Bipp," in his opinion, is of no value in preventing infection in a wound and is detrimental from all other viewpoints. Of 100 cases which had been treated with "bipp," 28 per cent. showed distinct evidence of bismuth poisoning; 19 per cent. had an acute hemorrhagic nephritis with large quantities of albumin, casts and red blood cells in the urine. In the treatment of extensive older infected wounds with widespread tissue reaction, and marked constitutional disturbances, the first and essential element is competent and adequate drainage, established without regard to the sacrifice of superficial tissue. Skin, subcutaneous tissue and deep fascia must be incised in a manner which will prevent pocketing; muscles must be separated and cut completely across, if necessary, to secure a wide open wound. All foreign material should be removed. Besley believes that little excision of the surrounding borders should be practiced in older wounds, for Nature has thrown up a barrier in the surrounding tissues which had better not be disturbed during the stage in which attempt is made to secure perfect drainage. Any tissue clearly necrotic should be removed.

Besley also believes it is important to avoid, so far as possible, the insertion of any tubes, gauze, rubber tissues, or other forms of drainage material. The best drainage can be secured by a free incision into all cavities containing pus; those incisions being made so as to prevent further pocketing. Occasionally it will be necessary in the preservation of a flap to place some foreign material beneath that portion of tissue which is left to prevent its becoming adherent to the deeper

structures. Rubber tissue or paraffin gauze is the preferable material. After a wound is completely drained, it is doubtful if irrigating solutions are of any value, either mechanically or because of germicidal qualities. Hot baths and hot moist dressings are an advantage, for they tend to promote better nutrition of the part by bringing to it a greater blood supply, thereby aiding the natural defense of the body.

It is Besley's practice first to secure adequate drainage in these large, badly inflamed wounds, as stated above. Then during the first twenty-four hours he resorts to hot packs or hot baths. After this, the wound is exposed to the open air with no dressing whatever in contact with its surface for at least twenty hours out of the twenty-four. During two periods of two hours each within the twenty-four hours the wound is covered with hot moist dressings or immersed in a hot bath. Besley believes that the Carrel-Dakin solution probably plays a most important rôle in the closure of wounds by secondary suture, for the purpose of shortening convalescence. In those wounds in which secondary suture is not contemplated, the open-air aseptic method gives more comfort to the patient, a more rapid process of granulation, and much less constitutional disturbance than any other method that is being employed at the present time.

141. **Military Surgery.**—The sterilization of a septic wound by means of any solution seems to the authors, in the light of their experience, too absurd even to consider seriously. They claim that all irrigations of infected wounds are useless. They affect only the pathogenic organisms on the surface of the wound with which they come in contact. It makes no difference whether there be one or 100 tubes inserted in an infected area, it still resolves itself into a partial disinfection of the surfaces which are in contact with the tubes. In other words, all solutions are absolutely powerless to affect pathogenic organisms which are present beneath the surface, and it is these organisms that are doing the damage. All micro-organisms on the surface of an infected wound are harmless and are of no consequence, for the simple reason that they have been thrown out of the tissues by the exuding serum. To kill and wash these away obviously does no good. Within the tissues there is always a plus pressure in both the blood and lymphatic vessels in relation to the surface of the wound. This means that the flow of serum is always outward toward the surface, which makes it as impossible for any solution to enter as it is for water to flow up hill. Certain chemicals are absorbed, but they are absorbed by the superficial lymphatic vessels only, and do not enter the intervascular spaces. These facts explain the failure of all irrigations. The authors are of the opinion that most extravagant claims have been made by many surgeons as to the miraculous results obtained by the Carrel-Dakin method. Hot wet dressing are useful in relieving pain and facilitating drainage by preventing the drying of discharges. Vaccine treatment for infected wounds in the base hospitals is of little value, because the cases are all acute and do not remain long enough for beneficial results to be secured.

146. To be abstracted in THE JOURNAL.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

December 15, 1917, **2**, No. 2972

1 *Penetrating Gunshot Wounds of Chest, and Their Treatment. G. E. Gask and K. D. Wilkinson.—p. 781.
2 Anatomic and Physiologic Principles Underlying Treatment of Injuries to Muscles, Bones and Joints. John Hilton's Principles of Treatment. A. Keith.—p. 785.
3 Gastro-Intestinal Sepsis Cause of Ménière's Symptoms. T. M. Hovell.—p. 787.
4 *Paraffin Treatment of Burns. A. J. Hull.—p. 788.
5 Case of Fulminant Cerebrospinal Fever without Meningitis. W. St. C. Symmers.—p. 789.
6 Chlorin Water in Treatment of Infantile Diarrhea. S. Rosebery. —p. 789.
7 Case of Cesarean Section Complicated by Rupture of Uterus. G. W. K. Crosland.—p. 790.
8 Fate of Halazone in Animal Body; Stability of Tablets Containing It. E. K. Dunham and H. D. Dakin.—p. 790.

1. **Treatment of Wounds of Chest.**—This paper is based on 500 men with penetrating wounds of the chest admitted to the casualty clearing station, however serious the complications. Cases of concussion hemothorax in which the pleura had not been opened by the missile are not included. The objects of the authors' investigation was to determine accurately the cause of death, and the possibility of lessening mortality and shortening convalescence by early operation. They found that in chest wounds deaths occurring at a casualty clearing station after a few days and deaths at the base are due to sepsis. Similarly, prolonged illness is almost entirely due to sepsis. Therefore, treatment should be directed toward the elimination of infection in chest wounds as in any other wound. In Gask and Wilkinson's service a patient admitted with a suspected penetrating wound of the chest is put to bed and allowed to rest undisturbed for one or two hours to recover from shock. The only exception to this rule is when there is a large opening into the pleura through which air is sucked. In such cases the opening is immediately closed by temporary skin suture without anesthetic. This gives the patient immediate relief. A survey is then made of the whole patient, and all wounds examined; evidence of hemothorax, pneumothorax or collapse of lung is sought. The position of the heart is of the greatest importance. The whole body should be searched for complicating wounds, especially with regard to abdominal and spinal injury. Cases in which the missile has not passed out of the body should be examined by roentgen rays.

The indications for early operation are: (1) a ragged wound of the soft parts; (2) compound fracture of ribs; (3) bleeding from parietal wound; (4) suction of air into the pleural cavity; (5) retention of a large foreign body in an accessible position; (6) pain, and (7) rapidly increasing pneumothorax due to a valve-like opening into the pleural cavity, which allows air to be sucked in and prevents its expulsion. In cases in which none of these indications is present—that is, when the wounds of the chest wall are small and clean, when there is no evidence of fractured ribs, when the foreign body retained in the lung or mediastinum is small—the case is treated on general medical principles. The patient is kept in bed, propped up or flat as he prefers, and a careful record is kept of the pulse, respiration and temperature. Contraindications for operations are: 1. Shock and collapse. 2. Small clean wounds, without evidence of serious intrathoracic injury. 3. Retention of a small foreign body in the lung or mediastinum. 4. Collapse of the opposite lung.

4. **Paraffin Treatment of Burns.**—Various preparations of paraffin have been made under Hull's direction, containing acriflavine, brilliant green, chloramin-T, etc., dissolved in the paraffin base. These preparations have been given a very extensive trial. Another direction in which the new antiseptics have been given scope for improvement has been the treatment of the burn by an antiseptic before the application of the paraffin. The results following this modification have been so satisfactory that Hull adopted it as a routine method. The method of application of the paraffin base is the same in all cases. The burn is first of all washed with physiologic sodium chlorid solution (1 in 1,000 acriflavine solution of proflavine has now been substituted). The burn is dried with gauze or an electric drier. A layer of paraffin is painted over the burn. The paraffin is applied at a temperature of about 55 to 60 C. A thin layer of wool is placed over the first layer of paraffin and a second layer of paraffin at the same temperature painted over the wool. A dressing of wool and bandage is applied over the paraffin dressing. The dressing is changed every twenty-four hours. The addition of antiseptics to the paraffin preparation gave better results than preparations without antiseptics. The first antiseptic to be extensively used was eucalyptus oil, which, in conjunction with betanaphthol, is still used in No. 7 paraffin. Scarlet red paraffin has given satisfactory results in general use. It accelerates healing. Flavine paraffin has given satisfactory results. Paraffin preparations of brilliant green and chloramin-T have not been satisfactory from a pharmaceutical point of view, the antiseptics being difficult to incorporate in the paraffin.

The effect on recovery of the application of various antiseptic solutions previous to the application of the paraffin has been studied. Eusol accelerated the cleaning of the burn, but was too irritating in its action. Brilliant green cleaned the burns well, and if used beyond a certain stage caused light colored and unhealthy granulations. Acriflavine cleans the surfaces well; whether better than brilliant green or not is doubtful, but it certainly produces a healthier type of granulation. Scarlet red is only used when the burns are clean and require stimulation. Mustard gas burns heal readily by the ordinary application of No. 7 paraffin. The treatment giving the most satisfactory results, obviating pain, sepsis and other complications, and which Hull has found generally applicable, is the one described above.

6. **Chlorin Water in Treatment of Infantile Diarrhea.**—In fifty-three cases chlorin water in the following mixture was administered by Rosebery:

℞	Gm.	or	C.c.	
Aqua chlori			26	♏ iv
Quin. sulph			008	gr. 1/8
Salol			26	gr. iv
Mucilag. tragacanth				q. s.
Aqua chloroformi	4		ad	℥j

Dose: ℥ ss to a child under 6 months, and proportionate doses in older children.

This was given every six hours for the first twenty-four to thirty-six hours, and then thrice a day until the stools were normal. In addition, 10 to 20 minims, according to age, of the following mixture was administered twice a day:

	Gm.	or	C.c.
Ol. ricini	30		℥j
Ol. olivae	30		℥j
Tinct. opii			13 ♏ij

Lavage of the bowel with physiologic sodium chlorid solution was resorted to in many cases. In cases of collapse a mustard bath was first ordered, followed immediately by injection of pituitary extract 1.5 c.c., repeated two or three times at intervals of four hours. Then an innunction of warm olive oil was given to diminish loss of heat from the skin. Lavage of the bowel was practiced two hours after the mustard bath. In the milder cases albumin water and barley water were sufficient. In the more severe cases sherry whey was given first until the vomiting ceased. The essential difference between the treatment adopted and that which is in common use was the administration of chlorin water.

Bristol Medico-Chirurgical Journal

December, 1917, **35**, No. 134

9 War Surgery in Indian General Hospital in Mesopotamia. P. S. Connellan.—p. 113.

Indian Medical Gazetta, Calcutta

November, 1917, **52**, No. 11

10 Pernicious Malignant Tertian Malaria Successfully Treated by Quinin Acid Hydrobromid Intravenously and Failure of "Splenox" in Benign Tertian Malaria. L. Rogers.—p. 385.
11 Bengali School Boys' Health Examination. R. C. Ray.—p. 386.
12 Position of Bearer Division or Subdivision During Rear Guard Action. C. C. Murison.—p. 393.
13 Probable Causes of Fever in Waziristan Field Force. G. A. Blake. —p. 393.
14 Rationing of Patients. B. Ram.—p. 394.
15 Six Months' Surgical Nursing. M. K. Strip.—p. 395.
16 Dressings of Surgical Cases. B. M. Lal and A. Singh.—p. 396.
17 Death from Rupture of Spleen Twenty-Five days After Abdominal Injuries and Apparent Recovery. H. K. Ganguli.—p. 399.
18 Maximal Perchlorid Irrigation of Conjunctiva in Cataract Operations. H. Herbert.—p. 400.
19 After-Treatment of Cataract Extraction by Shield Instead of Dressing and Bandage. H. Kirkpatrick.—p. 401.
20 Case of Ainhum. E. S. Bharucha.—p. 403.
21 Some New Inventions. W. H. Riddell.—p. 404.

Lancet, London

December 15, 1917, **2**, No. 4920

22 Surgery of Exophthalmic Goiter. T. P. Dunhill.—p. 883.
23 Nasal Reconstruction. J. L. Aymard.—p. 888.
24 Use of Turbinals and Septum in Repair of Injuries and Defects of Wall of Nasal Cavity. G. S. Hett.—p. 892.

Medical Journal of Australia

November 10, 1917, **2**, No. 19

25 Gunshot Wounds of Peripheral Nerves and Their Surgical Treatment. G. Owen.—p. 389.
26 Etiology of Gastric and Duodenal Ulcer. W. S. Laurie.—p. 394.
27 Two Cases of Traumatic Rupture of Spleen. R. M. Crookston. —p. 395.

Archives des Maladies du Cœur, etc., Paris

November, 1917, **10**, No. 11

28 *Experimental Research on Origin of Extrasystolic Arrhythmia. D. Pletnew (Moscow).—p. 513.
29 *Recent Research on Paroxysmal Complete Arrhythmia. Carpentier. —p. 533.

28. **Extrasystolic Arrhythmia.**—Pletnew's work was done on dogs and rabbits, and his report supplements his communication in 1916 in the same *Archives*. The aorta or pulmonary artery was compressed, or saline was injected into the coronary arteries. The injection did not seem to influence the rhythm, but compression of the arteries brought on extrasystolic arrhythmia. The right ventricle and tricuspid valve gave out first.

29. **Paroxysmal Complete Arrhythmia.**—Carpentier devotes nearly twenty pages to a critical analysis of recent publications on transient auricular fibrillation. He warns that digitalis should not be given at first, as the attack may subside spontaneously. But if it keeps up, and the dilatation of the heart becomes accentuated, with congestion of the liver and oliguria, digitalis must be given in fractioned doses, especially if there is some valvular defect. Digitalis is formally demanded when the arrhythmia appears along with menacing asystoly. It should be given in adequate doses from the start as soon as signs of heart insufficiency become apparent. When the subjective symptoms are intense, complete rest and reassurance may be called for, with hot or cold applications to the heart region, and sedatives. In the intervals between attacks, digitalis is not to be given unless there are signs of habitual heart weakness. When the stage of permanent arrhythmia is reached, digitalis must be given in small doses at regular intervals, increasing the doses when a murmur appears at the apex or other sign of dilatation of the heart.

Archives Médicales Belges, Paris

November, 1917, **70**, No. 11

30 *Elimination by the Kidneys. L. Ambard.—p. 1001.
31 Posterior Draining after Abdominal Operations. R. Reynders.—p. 1009.
32 Coma as Accident in Antimeningococcus Serotherapy. J. Roskam. —p. 1019.
33 Transfusion of Blood. A. Gratia.—p. 1029.
34 War Nephritis in Belgian Army. Moret.—p. 1035.

30. **Elimination by the Kidneys.**—Ambard strives to bring order into the confused conception of the three fundamental processes in elimination by the kidneys. He calls them elimination by effraction (as when blood or lymph gets into the uriniferous tubules), elimination by diffusion (osmosis), and actual secretion, the most characteristic feature of which is concentration. This permits the passage of a substance into the urine in proportions higher than the excess in the blood over the threshold of that substance. By the threshold he means the amount of that substance which is found constantly in the blood, unlike urea, iodin, methylene blue and ammonia which are eliminated until scarcely a trace may be left in the blood. The substances that have thresholds are those needed to build up the tissues, such as sodium chlorid and glucose. Those without a threshold are waste products. Only the excess above the threshold is what counts in estimating the concentrating power of the kidneys. The substances eliminated by diffusion seem to be the solvents of lipoids. The only hypothesis he knows of that seems to explain the mechanism of albuminuria is that there are two kinds of albuminuria, that of heart disease and that of kidney disease. With the former, the albuminuria is the result of excessive accumulation of albumin in the kidney region owing to the stagnation of the blood in the kidney; the albumin in the blood plasma is in excess above the threshold for albumin, and this excess is thrown off by the kidneys. In the nephritic type of albuminuria, an abnormal albumin appears in the blood, and is thrown off by the kidneys as an excrementitial element. One practical conclusion from his research is that it seems probable that substances which have a threshold must be regarded as useful to the organism. Hence determining the existence of a threshold may throw light on the

general conditions of the biology of the cell. Ambard, in closing, calls attention to a recent Paris thesis on the numerical laws of renal secretion, deduced from comparison of the blood and urine content (H. Chabanier, Paris, 1917).

Bulletin de l'Académie de Médecine, Paris

Nov. 20, 1917, **78**, No. 45

35 *Extraction from the Rear of Projectile Resting on Aorta. O. Laurent.—p. 597.
36 *Present Frequency of Scabies. G. Thibierge.—p. 601.
37 Extraction of Projectiles in the Lungs; Twenty-Five Cases. Petit de la Villéon.—p. 604.

35. See Paris Letter, page 44.

36. Ditto, page 112.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 12, 1917, **41**, No. 27

38 *The Meningococcus and Parameningococci. C. Dopter and others.—p. 988.
39 *Differentiation of Diphtheria Bacilli. S. Costa, J. Troisier and J. Dauvergne.—p. 991.
40 *Short Diphtheria Bacilli. P. Nobécourt.—p. 994.
41 *Achlorhydria without Cancer. F. Ramond, A. Petit and P. A. Carrié.—p. 997.
42 *War and the Suprarenals. F. Ramond and R. François.—p. 1001.
43 *Infectious Pyelitis. R. Le Clerc.—p. 1004.
44 *Abnormally Low Temperature in Soldiers. P. Merklen.—p. 1008.
45 *Pneumococcus Meningitis. G. Panayotabon.—p. 1015.
46 *Meningococcus Septicemia. A. Netter.—p. 1018.
47 *Meningitis Simulating Malaria. F. Bezançon and T. Gusman.—p. 1023.
48 *Suppurating Parotitis of Malarial Origin. L. Moreau.—p. 1027.

38. **Antimeningococcus Serotherapy.**—Dopter comments on the difference in meningitis now and before the war. The true meningococcus was found in 96 per cent. of cases before the war, but now various strains predominate. Agglutination with specific serums will help to differentiate them. Netter reports excellent results from a serum obtained by immunizing the horse simultaneously against the A and B strains. Two children with very severe meningitis recovered in sixty hours under three injections of 30 or 40 c.c. of serum thus obtained. One was a girl of 7, with purpura, already unconscious, and B meningococcus was found. The other was a boy of 13 with delirium and rigidity, and the A meningococcus. This polyvalent serum reduces the amount of horse serum that has to be used, which is a distinct advantage. Lousto stated that in 250 cases of meningitis he injected antimeningococcus serum at first, and if no improvement was noted he changed to the antiserum for other strains. Since this has been done the mortality has been much reduced.

39. **Rapid Cultivation of Diphtheria Bacilli.**—Costa and his co-workers describe a method for rapid differentiation of true diphtheria bacilli. It is based on the fact that these seem to be the only ones in their class that attack glucose and turn litmus red. Control tests in nearly a hundred cases have confirmed the prompt and reliable findings with this technic. They made the test on 560 smears; the results were particularly satisfactory in the carriers whose scanty bacilli it was difficult to detect with other technics. The culture medium is a mixture of 100 c.c. horse serum; 10 c.c. of a 30 per cent. sterilized solution of glucose; 30 drops of concentrated and sterilized tincture of litmus (prepared by the Institut Pasteur); 3 c.c. of 1 per cent. solution of sulphuric acid (10 gm. per 1,000). This mixture is distributed in flat Petri boxes, 10 or 12 c.c. to the box. It is coagulated in the autoclave or with dry heat, very slowly raising the temperature to 75 and 80 C. and keeping this up for an hour and a quarter. Then the boxes are turned over and covers lifted to expel any condensed moisture, and they are then dried. They can be kept for several days. The medium is blue with a slight greenish tinge, transparent, firm and elastic. It is inoculated with a triangular loop of platinum passed over the end of the cotton with which the throat has been swabbed. The loop is then dragged along the surface of the medium in parallel segments until all is smeared. The boxes are then incubated at 37 C., the cover below. In twenty-four hours the true diphtheria bacilli colonies show as transparent red pinheads. The false diphtheria bacilli do not attack glucose or modify the litmus tint. They show as opaque, gray, creamy colonies, while streptococci and pneumococci persist as merely punctiform colonies. Staphylococci sometimes turn the medium red, but the aspect of the colonies is different and the microscope will settle their identity. The findings with this method are so distinct and reliable that one box can be made to answer for two specimens.

40. **Short Bacilli in Infectious Sore Throat.**—Nobécourt states that smears have been made from every case of sore throat in his service during the last fifteen months. When the gram-positive bacilli were long, the case always proved to be one of true diphtheria. This was sometimes the case also with the medium sized bacilli, but it was exceptional with the short bacilli. The latter were found in 13 per cent. of the total cases. There never seemed to be any contagion from them, and the conclusion seems justified that healthy carriers of the short bacilli need not be isolated as strictly as those with the long and medium bacilli.

41. **Anachlorhydria.**—Ramond, Petit and Carrié state that in 270 dyspepsia cases anachlorhydria was found in thirty-six with no sign of a neoplasm, and in eight with a certain and in three with a dubious history of cancer. The symptoms presented in the thirty-six noncancer cases were not characteristic in any way, and sometimes there was no dyspepsia with the anachlorhydria. Diarrhea was exceptional. The anachlorhydria may prove a transient phase after acute gastritis. Hypersecretion of mucus is the rule with achlorhydric gastric juice. The anomaly is probably the sequel of some inflammatory process or congenital defect.

42. **War Suprarenal Insufficiency.**—Ramond and François remark, "This protracted war demanding of all our fighting men a continual moral and physical tension, forces overexertion on all the organs, especially the suprarenal capsules. The literature of the war already contains manifold examples of weakness, low blood pressure and dyspepsia from addisonism and in various infectious diseases. All bear the imprint of inadequate epinephrin supply. It is probably an important feature likewise in the clinical picture in the gassed." In their sector since last May they have encountered twenty-six cases of actual Addison's disease. All progressed to a fatal termination except in four cases. In these the thyroid functioning was defective, and improvement was realized under thyroid treatment.

43. **Infectious Pyelitis.**—Le Clerc relates that two days after a five-day febrile grip he developed colon bacillus pyelitis. The afebrile pyuria persisted for seven weeks before subsiding without leaving a trace. He has learned since of five exactly similar cases, all with the same favorable outcome in from five to seven weeks.

44. **Abnormally Low Temperature in Soldiers.**—Merklen says that the symptom hypothermia deserves a few lines in the medical history of the war. He has noticed cases in which during convalescence from pneumonia or other serious illness the temperature kept at 36 or touched 35 C. (95 F.) for a few days. The condition of the men did not seem to differ otherwise from the other patients. In some other men, even without preceding disease, the temperature chart turned upside down would be typical of typhoid, the range being 35 and 36 C. for two weeks. The fatigue from trench life is not the only cause, as the hypothermia has been noticed also in men in barracks that have not yet been to the trenches. It is accompanied sometimes by weakness and depression. Digestive disturbance is probably responsible in most cases, but suprarenal insufficiency may possibly be involved in others. In any event the temperature rights itself in time.

45. **Pneumococcus Meningitis.**—Two children in one family developed fatal meningitis and the pneumococcus was found in the pus in each. No carriers were found in the family. Antimeningococcus serum failed to show the slightest benefit.

46-47. **Intermittent Fever with Meningococcus Septicemia.**—Netter has encountered five cases of typical daily or tertian intermittent fever dragging along for one, two or more months, and explained by the cultivation of the meningococcus from the blood or ultimate development of meningitis. The septicemia may run its entire course without meningitis.

Rapid recovery under serotherapy at any stage is the rule. Cultures of the meningococcus may be obtained from the purpura scraps.

Bezançon reports a similar case in a woman of 30 and one of 19, and Louste adds three more cases. In one the woman seemed to have infectious purpura, but as there was a case of meningitis in the neighborhood he ventured lumbar puncture which revealed the meningococcus. In the second case a polymorphous erythem masked the meningitis.

48. **Suppurating Parotitis in Malaria.**—Moreau emphasizes the necessity for watching over the mouth and supplying the organism with water in every disease accompanied by much loss of fluids in sweats, etc. The dehydration favors ascending infection in the mouth, and in severe malaria has been responsible for protracted suppuration in the salivary glands. He describes two examples of this; both men still had persisting fistulas when last seen.

Le Nourrisson, Paris

November, 1917, **5**, No. 6

49 *Classification of Digestive Disease in Infants. A. B. Marfan.—p. 321.
50 *Feeding of Infants with Congenital Debility. A. Mola (Montevideo).—p. 329.
51 *Whooping-Cough in Young Infants. G. Railliet.—p. 344.
52 Official Welfare Work for Infants. A. B. Marfan.—p. 347.
53 Relations between the Corpus Luteum and the Mammary Gland. Mulon.—p. 352.
54 *Milk in Infant Feeding. A. B. Marfan.—p. 360.

49. **Classification of Diseases of the Digestive System in Infants.**—Marfan extols the advantages of the classification he proposes, namely, that all the pathology of the digestive tract in infants can be separated into four groups according to the predominant symptom: Group 1 with vomiting; Group 2 with diarrhea. Both of these groups have a subsection with gastric or intestinal hemorrhage as the leading symptom; Group 3 with constipation. A subsection in this group presents anorectal fistulas or other process as the leading symptom; Group 4 with denutrition as the predominating symptom. He has found that this classification facilitates clinical analysis, and guides to the correct diagnosis and indications for treatment.

50. **Feeding of Infants with Congenital Debility.**—Mola includes in this group the prematurely born and all infants weighing less than 2,500 gm. at birth. Breast milk is indispensable, as the incompletely developed digestive system is unable to digest cow's milk. But these infants need much more food in proportion to their weight than ordinary children. Budin claims that they require daily a fifth of their weight in milk. Mola has been studying the effect of the fat in breast milk as affecting these feeble infants. He estimated over a period of five months the fat content of the milk of five women between 25 and 30 who were giving the breast to sixteen of these feeble infants. In fifty analyses of the breast milk he was impressed with the variability in the fat content, even on the same diet. The normal average is generally stated to be 35 per thousand, but he found 40 and 50 per thousand quite common, and yet the premature infants thrived so well on it that fat is evidently the primordial element, he says, for their growth. The large proportion of fat caused no gastro-intestinal disturbance, and the age of the wetnurse and the period of the lactation seemed immaterial. Whatever the original weight of the premature infants, once past the first dangers, they grew splendidly in weight, he says, on breast milk rich in fat.

51. **Whooping Cough in Young Infants.**—Railliet reports a familial epidemic of whooping cough affecting first a boy of 3½ with grave Little's disease. He died the eighth day and a weakly girl of 20 months developed the whooping cough the next day and died in eight days. The mother showed symptoms of the disease the same day as this child, a few hours after rapid delivery of a child two weeks before term. The infant was nursed by the mother and speedily presented the symptoms of whooping cough with cyanosis, râles and dyspnea besides the cough. The disease was of an abnormal type, showing the lack of protecting defences. The child survived till the fifteenth day and then succumbed with symptoms of bronchopneumonia and heart failure as in the other children. Sprays, revulsion, heart tonics, and fixation abscess failed to arrest this tragic sequence.

54. **Milk for Healthy Infants.**—Marfan discusses whether it is best to add salt, sodium bicarbonate, lime water or sodium citrate to cow's milk for healthy infants. His decision is that they are not called for when the infant is thriving on the plain milk, but that one or the other may aid in certain digestive disturbances.

Presse Médicale, Paris

Nov. 22, 1917, **25**, No. 65

55 *Recent Research on the Functions of the Suprarenals. H. Roger.—p. 665.
56 Polyvalent Vaccine Therapy of Infections. G. Pochon.—p. 668.
57 Urticaria from War Gases. M. Pinard.—p. 668.

55. **Suprarenal Functioning.**—Roger reviews the multiple functions of the suprarenals, as he has determined them in large part by his own research, showing how they participate continuously in the workings of the economy, and the rapidity with which they respond to different nervous excitations. They restore almost instantaneously the balance in the blood pressure, or at least counterbalance the morbid influences which tend to depress it. They intervene as well in psychic disturbance as with material lesions of the nerve centers; they combat the exhaustion of the heart induced by fatigue, and modify the action of the pneumogastric on the heart. They also regulate nutritional metabolism and influence the consumption of sugar. They also serve in the elaboration of pigments, of cholesterol and of lipoids, and seem to act also on different poisons formed or introduced in the organism. This multiplicity of functions explains the multiplicity of disturbances for which they may be responsible. Among the numerous experiments related are some on rabbits with pulmonary edema induced by injecting into the veins a large amount of some isotonic and isoviscous fluid; by injecting methyl salicylate or similar substance which irritates the lung capillaries; or by intravenous injection of epinephrin. The hypersecretion in the lungs looks alike in all, but injecting each into a separate rabbit causes a very different response. The fluid from the first rabbit does not modify the blood; from the salicylate rabbit the pressure is reduced, while from the epinephrin rabbit, it sends the blood pressure very high. The rôle of the suprarenals in the development of arteriosclerosis has also been confirmed in Roger's laboratory. Repeated intravenous injections of epinephrin induced pronounced lesions in the arteries, but subcutaneously it induced glycosuria. This shows that it is by their action on the suprarenals that nervous impressions induce glycosuria, and that it is by the intermediation of these glands that puncture of the fourth ventricle produces this effect. The action of the pancreas hormone counterbalances the action of epinephrin. In thyroidectomized animals the epinephrin injections never induced glycosuria.

Revue Médicale de la Suisse Romande, Geneva

November, 1917, **37**, No. 11

58 *Physiologic Segmentation of the Patella. P. Reinbold.—p. 653.
59 *Heliotherapy and Pigmentation. L. Jeanneret and F. Messerli.—p. 668.
60 *Indications for Cesarean Section. C. G. Cumston.—p. 691; L. Aubert.—p. 703.

58. **Ossification Anomalies in the Patella.**—Reinbold gives roentgenograms of four cases of injury of the knee in which the medicolegal expert testimony was conflicting. An anomaly in ossification was evidently responsible for the misleading findings, and as they were alike in all, this anomaly should be excluded in case of injury of the knee before ascribing the findings to traumatism. The anomaly in question is the splitting off of a segment of the patella, always in the upper, outer quadrant, the loose portion looking like a nut lying on the rest of the patella. Sometimes this separate portion is fragmented. It may be movable or solidly adherent to the rest. It corresponds to the location of the longitudinal fractures of the patella, and consequently, to avoid confusion, palpation of both patellas and symmetrical radiography is necessary. This segmentation has nothing to do with traumatism, he says. In some of his cases there had been no

trauma and in the others the trauma was indirect and not serious. There were no local symptoms, no diastase, no effusion, and the joint could be moved normally. There was no sign of callus even four months after the trauma. The importance of this anomaly in ossification lies in the fact that it is discovered only in examining after a trauma. It imposes the necessity for examining the other knee at once.

59. **Heliotherapy and Pigmentation.**—Jeanneret and Messerli have made a systematic study of the tanning of the children taking courses of heliotherapy at a mountain sanatorium, 200, 720 and 800 children during the last three years respectively. They give a colored plate showing ten different tints in tanning, and urge that this plate be pasted on cardboard or a sheet of metal to serve as the standard pigmentometer. The pigmentation seems to be a normal phenomenon of a defensive reaction. It depends on the proportion of hemoglobin in the blood, hence is an index of the general resistance of which the organism is capable, and its power of reacting to the heliotherapy. Premature subsidence of the tan is a sign that the hemoglobin supply is giving out. Tuberculosis is the disease, above all others, which intoxicates the organism with the autogenous tuberculin and thus drags down the hemoglobin percentage. This secondary anemia is revealed in the depigmentation of the tanned children. Hence the tanning and the depigmentation are important both for diagnosis, prognosis and treatment. There must be an ample hemoglobin supply for the child to tan normally and to keep its tanning after cessation of the course of heliotherapy. This assumption is based on the findings in hundreds of cases over years compared with the clinical course, which they classify and tabulate. The sun bath acts on the skin first of all, stimulating the peripheral circulation and thus nourishing the muscles, vivifying the blood and increasing the hemoglobin percentage. This effect is so constant that sunlight is evidently the ideal remedy for debility in children, especially when associated with proper physical training. This action on cellular metabolism seems to be the whole secret of the success of heliotherapy in certain chronic affections, thanks to its stimulation of the processes which induce immunity. This explains the advantage of preventive heliotherapy against tuberculosis, such as L. Jeanneret has long been advocating. In non-infected children, adults and animals, the sun does not stimulate the processes of immunity as there is nothing to start them with. Although the general resistance may be superb, as in Australian natives and in the cattle of the Hungarian plains, constantly in the sunlight, yet infection once installed is liable to run a peculiarly malignant course, owing to the total lack of tuberculosis in their native environment. But in children already infected, the sunlight hastens and intensifies the protecting immunity processes already under way, and aids the organism in keeping the infection down and crushing it out.

Month after month during these three years they have witnessed how progressing tuberculous glands pass into a torpid phase—the test of victory over the primary infective tuberculosis; slight lesions in the lungs heal; and children who have been coughing all winter pass through the winters after their course of heliotherapy without "colds" of any kind. The beneficial action of the sunlight is equally effectual in the lowlands, in the mountains and at the seashore—the only difference is the number of days of sunshine. The proportion of ultraviolet rays was found by Berthelot to be approximately the same on the summit of Mont Blanc, on the shore of the Mediterranean and on the plains of France. When well tanned healthy children develop an acute infectious disease, they bleach out rapidly. The children that tanned rapidly and retained their pigmentation till spring were the healthiest ones. Among sixty-one children with slightly febrile tuberculous processes, four showed marked bleaching after four rainy days while no modification was evident in the 470 children of the other groups.

60. **Cesarean Section.**—Cumston's statements are based on twenty-nine cases, with thirty-three children, with all the children living except one. He warns that the toxemia resulting from the muscular effort of labor is bad preparation for cesarean section; every hour adds to the risk. It should practically never be attempted after fruitless efforts at extraction by the vagina or if the woman has an acute disease, but acute or chronic nephritis is not a contraindication. Among the indications for cesarean section he cites valvular disease, especially if it is the first child and the soft parts are stiff. Even if the women survive the fatigue of natural labor, it may permanently compromise their health. He advises repeating the cesarean operation at a later pregnancy even if the indications for the first operation no longer exist. The cicatrix otherwise is liable to open up again during the stress of labor. Hysterectomy renders the cesarean operation so much more serious that he advises to postpone it till later when possible. If the uterus is infected and no other mode of delivery is possible, the cesarean section should be followed by hysterectomy. The operative mortality may be high, but will not be so high as if the infected uterus had been left in place.

60. **Cesarean Section.**—Aubert reviews the conditions outside of contracted pelvis that may call for cesarean section. As a typical example he describes the case of a primipara of 43 with a perineal cicatrix from recurring anal fistula. Small fibromas could be palpated in the walls of the uterus; the vagina was unusually narrow; the pelvis normal. After twenty hours of labor, the os was only just beginning to dilate. The simplicity and facility of cesarean section in such cases are remarkable in comparison to the gravity and risks for the child of natural delivery. Breech presentation in an elderly primipara should suggest cesarean section, as also stenosis of the cervix, whatever its origin. As to placenta praevia, he says that at or near term, with living child and asepsis guaranteed, when the woman can be taken to the hospital, cesarean section is justified for placenta praevia, especially when it is of the central type.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 24, 1917, **47**, No. 47

61 *Determination of the Maximal Pressure by Palpation. C. T. Baumann.—p. 1569.
62 *Rachitis Developing at Thirteen. B. Ricklin.—p. 1586.

61. **Determination of Maximal Blood Pressure.**—Baumann reports extensive research on large numbers of patients at the medical clinic of the University of Berne, in charge of Sahli. Seventeen pages are devoted to the different series of tests. He declares that defective manometers must be responsible for some of the conflicting findings on record. The soft parts also influence the findings in a way impossible to estimate beforehand. The usual acceptance of the disappearance of the radial pulse as the criterion is a mistake, as the brachial pulse can still be detected after the radial has stopped. An error up to 20 mm. mercury may occur from this. It would be better to palpate the brachial artery just below the Riva-Rocci cuff if it were not that the fat in some persons would prevent this.

62. **Tardy Rachitis.**—The boy of 15 had developed symptoms of rachitis in the last two years with pains in the knees and ankles in walking. He was of a healthy family and had always been healthy, living in good circumstances in the country. He became irritable and whining, and lost flesh. With the knees touching, the ankles were 12 cm. apart. The calcium and phosphoric acid metabolism over six periods two before, two during and two after systematic courses of cod liver oil and calcium phosphate showed remarkable improvement under this medication, the boy finally showing the normal growth and symmetry of his age, with no visible signs of rachitis. At first phosphorus-cod liver oil was given, 0.01 : 100, three times a day, 5 c.c. Under this the calcium retention rose from 0.22 gm. CaO (15.2 per cent. of the calcium ingested) to 0.36 gm. CaO (22 per cent. of the calcium ingested). Still better results were obtained when this medication was dropped and the insoluble tribasic calcium phosphate given instead, 10 gm.: 100 c.c. cod liver oil; 5 c.c. three times a day. This insoluble calcium phosphate also gave better results in Schloss' hands in treatment of rachitis in infants.

Under this, in Ricklin's case, the retention of CaO was 0.85 gm. (39.9 per cent. of the calcium ingested) for twenty-two

days. Then an operation was done to correct the genua valga and the metabolic research was arrested. The retention of phosphoric acid kept pace with that of calcium, the figure rising proportionally from 0.3 and 0.92 to 1.99 gm. (11.25; 24.6 and 41.1 per cent. of the amount ingested). Very much larger doses of other salts of calcium are necessary to attain such results as these, and the fact that the calcium retained was actually utilized to build up the bones is evident from the roentgenograms of the hand before and after.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 18, 1917, **38,** No. 92

63 *Prophylaxis of Inguinal and Femoral Hernia in Soldiers. G. Cajozzo.—p. 1218.

November 22, **38,** No. 93

64 *Malaria at Venice and the War. G. Jona.—p. 1233.

63. **Prophylaxis of Hernia in Soldiers.**—Illustrations are given of a bandage to be worn under or outside the shirt as a support to and preventive of hernia. The bandage is 5 meters in length by 8 cm. wide. It is passed across the pubic symphysis, crossed in the back over the sacrolumbar articulation, and the ends are brought around and crossed again over the symphysis. The ends are then carried around the root of the thigh and brought up along the side of the scrotum. The rolls formed by what is left of the ends are tucked under the flat part of the bandage above, where they serve as pads and are held in place with a safety pin. He thinks a simple bandage of this kind or its equivalent should be part of the equipment of every soldier, especially the cavalry.

64. **Malaria at Venice.**—The malaria encountered at Venice has been a mild form for many years. The number of cases dropped from 868 in 1876 to 102 in 1882, and in 1912, 1913 and 1914 the figures were respectively 18, 37 and 40. During the last three years there has been a large proportion of pernicious cases. Jona remarks that there seems to have been a general recrudescence of malaria in the last year or two, and Italy seems to be bearing the brunt of it. The details of four pernicious cases are given. In one the patient seemed in good condition without fever, and Jona was waiting for the next paroxysm to give quinin, when the woman was felled as by an apoplectic stroke, and died in coma apparently unmodified by 3 gm. of quinin given intravenously. He urges that all patients with rebellious malaria should be sent to some mountain resort both for their own benefit and to ward off infection of others.

Policlinico, Rome

November 4, 1917, **24,** No. 45

65 *Subcutaneous Injection of Quinin in Malaria. N. Pende.—p. 1329.
66 *Treatment of Infected Wounds. D. Silvestrini.—p. 1333.
67 The State and Infant Welfare Measures in Italy and Scotland. M. Flamini.—p. 1338.

65. **Treatment of Malaria.**—Pende reports excellent results in severe and obstinate cases of malaria in which he gave quinin subcutaneously. The dose was 2 gm. of the quinin hydrochlorate, equivalent to 1.64 gm. of the alkaloid, in 250 gm. of physiologic saline, plus 0.5 c.c. of the commercial 1:1,000 solution of epinephrin. He insists that the patients bear this remarkably well, and the urine shows the presence of the quinin in an hour more or less. He makes the injection six or seven hours before the anticipated attack, giving a second injection fifteen or twenty-four hours later, and, in the severer cases, earlier than this, waiting only twelve hours. By this means the patient gets nearly 3 gm. of the alkaloid in the course of fifteen or twenty-four hours. No more quinin is given for five or six days, then the third injection is given and a fourth five or six days later. A week after the fourth injection the patient begins to take daily 2 or 3 gm. quinin by the mouth, fractioned, three days each week, with iron and arsenic in the interim. He comments on the fine results obtained, ascribing a large share in this to the epinephrin which wards off vasomotor collapse under these large doses of quinin. There have been no mishaps, no albuminuria, and this method is so harmless that he advises two of the injections at fifteen or twenty-four hours interval in dubious cases without waiting for a positive diagnosis.

66. **Infected Wounds.**—Silvestrini warns that a sharp distinction should be made between the treatment of infected wounds in the field hospital and in the base hospital. The measures advised for one do not apply to the other.

Riforma Medica, Naples

November 3, 1917, **33,** No. 44

68 Advantages of Enrichment Technic for Colon Bacilli in Testing Water. N. Pane and C. Ninni.—p. 1033.
69 Contracture from War Wound Inducing Genu Recurvatum. C. Pastine.—p. 1037.

Rivista di Clinica Pediatrica, Naples

November, 1917, **15,** No. 11

70 Consulting Stations for Healthy Infants. G. B. Allaria.—p. 561.
71 *Mothers' Refectories. G. B. Allaria.—p. 577.
72 *Pathogenesis of Congenital Depression in the Thorax. R. Simonini. —p. 595.

71. **Mothers' Refectories.**—This is Allaria's third article on sanitary prophylaxis for infants. He considers here the institutions which supply one nourishing meal a day to nursing mothers. Pestalozza founded the *Aiuto materno* at Florence to supply nursing mothers with materials for the meal at home. It was found that this reduced greatly the number of foundlings. Similar institutions elsewhere have the advantage of keeping the mothers in touch with the "consultations," but the mothers and the children did not thrive so well as when the mothers come daily to a refectory where a nourishing meal is served to them. Rome organized a refectory of this kind in 1879 and several are now running there. One was opened at Paris in 1905, and two societies are now engaged in the task, serving from 10,000 to 25,000 meals a year; five other French cities now have them, as well as other countries. The nursing mothers most in need of nourishing food, those with younger infants and those with several children should be given the preference when the demand exceeds the supply. Women should be admitted also during the last week of pregnancy. The nursing period may be said to include the first seven months, as the minimum, up to fourteen months. The hours that interfere least with the women's home duties are between 10 and 11 and 5 and 6. The infants should be cared for in a separate room while the mothers are eating, and it is a great advantage to have facilities where the infants can be bathed at need. A small circulating library of books on the care of infants is also useful.

The expense (outside of war times) was at Bologna less than 20 cents a day per head, including the consultations and the meals. At Paris it averaged from 6 to 9 cents. At an expense of not over $60 a year the nursing mother can thus be assured nourishment for her task of nursing. Street car tickets may have to be supplied the mothers. The car company may donate them, stamped to be used only at the given hour. The fear that the children might give or take infectious diseases has not been realized. The refectory and the consultation are connected, and the children are known. The danger of pauperizing the women is overcome by impressing on them that they pay for every meal by the milk they give their infant.

72. **Depression in the Thorax.**—Simonini describes what he thinks are the causal factors in the depression in the front of the chest presented by some new-born infants. The sternum sinks in. The necropsy findings in three cases showed nothing abnormal in the viscera except the fatal intestinal disease.

Rivista Critica di Clinica Medica, Florence

Oct. 27, 1917, **18,** No. 43

73 *Big Abdomens in Soldiers. S. Pisani. Commenced in No. 40, p. 390.

November 3, **18,** No. 44

74 Necessity for Standard Technic for the Wassermann Test. A. Ceconi.—p. 433. Commenced in No. 43, p. 424.

November 10, **18,** No. 45

75 *Leukemia and Tuberculosis. F. Rietti.—p. 445. Commenced in No. 44, p. 436.

November 17, **18,** No. 46

76 *Meningococcus Infection with Tardy Meningitis. C. Cantieri.—p. 457. Commenced in No. 45, p. 448.
77 *Mirror Phobia. A. Martiri.—p. 461.

73. **Big Abdomens in Soldiers.**—Pisani says that a tonic spasm of the diaphragm during inspiration, associated with a segmental contraction of the oblique and transverse muscles, is causing a new variety of hysteric meteorism. Under chloroform the abdomen subsides to its usual outline, and sometimes it subsides during sleep. In the twenty cases studied, other signs of hysteria were manifest.

75. **Leukemia plus Tuberculosis.**—The cases on record of the association of leukemia and tuberculosis are classified by Rietti according as the tuberculosis was acute or chronic or without characteristic manifestations during life. In a personal case described a woman of 46 had chronic myelogenous leukemia, and necropsy showed the lesions of tuberculosis in various organs, but no tubercle bacilli could be detected.

76. **Tardy Meningitis.**—Cantieri reports a case which confirms the possibility of meningococcus infection running a protracted febrile course without any special localization for months. The young man was sent to the hospital with the diagnosis "malaria." Extreme weakness, slight fever at evening preceded by a feeling of chilliness, with pains in the limbs, and followed by slight sweating were the main symptoms for six weeks, growing gradually more severe and the joints and muscles becoming the seat of diffuse pains. The last two or three weeks the fever curve was of a remittent intermittent type, sometimes skipping three days and again showing no regularity. The young man had lost flesh, the skin was dry and bronzed, the mucosae blanched. The anterior of the tibia was slightly tender. About the seventieth day typical epidemic meningitis developed. Treatment had been with quinin at first, then with epinephrin subcutaneously, and heart tonics. Later a course of mercury was given. The meningitic symptoms solved the problem. The meningitis was mild and rapidly subsided; the temperature had begun to go down the day before serotherapy had been started. Bacteriologic examination of the blood had been done only once and had been negative. In another case intermittent high fever for three weeks was assumed to be of malarial origin until meningitic symptoms cleared up the diagnosis. In another case a peculiar intermittent fever developed after an attack of meningitis—a postmeningitic meningococcemia. In Hugel's case the fever for thirty days was accompanied by pains in the bones, joints and muscles as in Cantieri's first case. Urobilinuria was pronounced and constant, as also neutrophil leukocytosis. No eosinophils were found at one examination but later 4 or 3 per cent. Recent research by Pisani seems to show that the appearance of eosinophils in the course of meningococcus infection is a favorable omen. When they reach 4 or 5 per cent. by the twenty-fifth or thirtieth day, recovery can be counted on.

77. **Mirror Phobia.**—Martiri has encountered three cases of what he calls catottrophobia, from the Greek word for "mirror." The men were neurasthenic and shrank with absolute distress from the sight of a mirror and were uneasy in the room with one. For shaving, etc., they used very small mirrors, reflecting as small an area as possible for the purpose. The men were young and had been previously healthy until they wasted away under a grave form of dyspepsia of a neurotic type. From watching the change in their appearance week by week as their emaciation progressed, they grew to have a horror of every mirror, and this persisted after they had thrown off their dyspepsia.

Semana Medica, Buenos Aires

September 27, 1917, **24,** No. 39

78 Abortive Treatment of Syphilis. D. Speroni.—p. 355.
79 Identification of Medicinal Sulphonals. J. A. Sanchez.—p. 358.
80 *Infarcts in the Placenta. V. Morinelli.—p. 360.
81 The Charitable Institutions of Buenos Aires. E. R. Coni.—p. 364. Continuation.
82 Antityphoid Vaccination in Argentine Navy. L. S. Moreno.—p. 372.
83 Atomizer for Paraffin Spray. J. M. and M. E. Jerez.—p. 373.

80. **Infarcts in the Placenta.**—Morinelli states that he found subchorial infarcts in 60 per cent. of the placentas he has examined. White nodular infarcts were found in 15 per cent. They seemed to be a sign of decidual endometritis, but did not affect the pregnancy in any appreciable way and did not seem to have any connection with syphilis or tuberculosis.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Oct. 6, 1917, **2,** No. 14

84 *The Tubercle Structure in Dermatologic Diagnosis. W. L. L. Carol.—p. 1201.
85 *Deficiency Diseases. D. J. H. Pol.—p. 1212.
86 Roentgen Treatment of Uterine Fibromyomas. L. F. Driessen.—p. 1222.
87 Case of Inherited Cerebellar Ataxia. J. R. Kollewijn.—p. 1225.
88 Optochin in Pneumonia. J. de Hartogh, Jr.—p. 1229.

84. **The Tubercle in Diagnosis.**—In connection with a puzzling case of suppuration in the leg with fourteen fistulas but no pain except on pressure, Carol discusses whether the tubercle must be regarded as always an evidence of tuberculosis. His decision is that giant cells and the tubercle structure may occur with other skin diseases, and hence that the tubercle bacilli probably are not directly concerned in their production.

85. **Deficiency Diseases.**—Pol has had much experience with Asiatic polyneuritis and its cure with a tropical bean, *Phaseolus radiatus,* and has published several studies of the deficiency diseases in general. He here reviews the evidence to date, and reaffirms that alimentary polyneuritis (beriberi, ship beriberi and the usual form of polyneuritis), scurvy, Barlow's disease and pellagra are all "avitaminoses," that is, deficiency diseases. The lacking substances, however, are not the same for each, the lack of different vitamins being responsible for different manifestations.

Hospitalstidende, Copenhagen

October 31, 1917, **60,** No. 44

89 *Chronic Hemolytic Jaundice. K. Faber and E. Meulengracht.—p. 1069.
90 *The Morphology and Biology of the Spirochaeta Pallida. A. Kissmeyer.—p. 1074. Commenced in No. 43, p. 1049.

89. **Chronic Hemolytic Jaundice.**—Faber's account of his research on the pathogenesis and symptoms of chronic hemolytic jaundice was summarized in these columns, July 31, 1915, p. 468. He here describes the findings in the healthy members of the families in which the cases of hemolytic jaundice had developed. The red corpuscles of the healthy members of the family proved to be no more fragile than in normal families. It was found, however, that the resisting power of the reds declined with warm temperatures. Previous research which did not take this influence of the temperature into account has given erroneous deductions.

90. **The Pale Spirochete.**—Kissmeyer's sketch of the history, morphology and biology of the *Spirochaeta pallida* seems to definitely establish that it is a true spirochete. However, its place in the natural system is still undecided.

Hygiea, Stockholm

Oct. 16, 1917, **79,** No. 19

91 History of Catheterization of Eustachian Tube. H. Key-Aberg.—p. 987.
92 Symptoms with Recent Traumatic Injury of the Internal Ear. H. Key-Aberg.—p. 1001.

Ugeskrift for Læger, Copenhagen

November 1, 1917, **79,** No. 44

93 *Focus of Infectious Jaundice. J. Kamp and T. B. Wernøe.—p. 1777.

93. **Endemic Focus of Infectious Jaundice.**—Kamp and Wernøe state that 200 or 250 cases of infectious jaundice have been known within the last fifteen years in Nexo, a seacoast district in Denmark which has a population of less than 6,000. Both man and the domestic animals are affected by the disease. Bacteriologic examination has revealed only paratyphoid B bacilli. The disease can be transmitted from man to animals and from animals to man. The jaundice is the first and most striking symptom, with tenderness of the gallbladder, but diarrhea, often bloody, accompanied by colic pains mainly around the umbilicus, persisting in spite of all medication for weeks and months, is the most serious feature of the disease, along with the great depression in the general health, the somnolency, anemia and dull, sunken eyes. Bleeding from mouth, nose, bowel and urinary apparatus is common, as also complicating pneumonia and myocarditis. Five of the writers' patients died, and in all there seemed to be a tendency to recurrence.